# MacWEEK

20 March 1990 Vol. 4 No. 11 WORKSTATION NEWS

## Apple deals new deck of color cards

By John Battelle

San Jose, Calif. — With the introduction of its new color video cards here this week, Apple wants to give customers the chance to get 24 bits for their dollar.

The new products will replace the current video line by midyear, trimming the number of cards Apple offers to four:

▶ The $648 Display Card 4•8 supports up to 256 colors or gray levels (eight-bit pixel depth) on Apple's 13-inch RGB (red, green, blue) monitor. On Apple's Portrait and Two Page displays, it will support a four-bit pixel depth, or 16 shades of gray. The 4•8 will not ship until summer, however.

▶ The $899 Display Card 8•24 supports up to 16.7 million colors (24 bits) on the 13-inch display or 256 gray levels on the Portrait and Two Page displays. The 4•8 can be

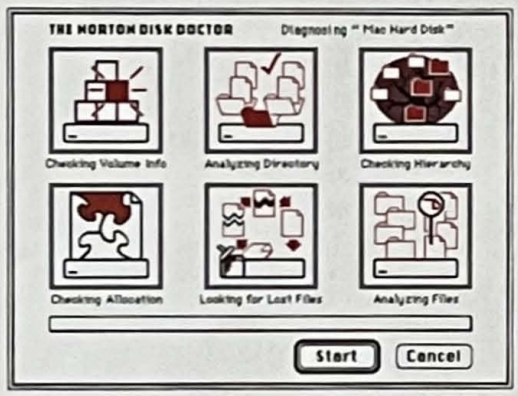
*See Video cards, Page 9*

## Norton nears a new niche

### *PC leader offers Mac utilities*

By Raines Cohen

Santa Monica, Calif. — Peter Norton Computing Inc., a longtime leader in the MS-DOS utility market, will enter the Mac world next week with a package that promises automated file recovery, optimization and a host of disk-navigation conveniences.




**The Norton Disk Doctor, a module in The Norton Utilities, analyzes the contents of disks and helps retrieve crashed or deleted files.**

Beta testers familiar with The Norton Utilities for the Macintosh said the several linked programs that make up the package combine

*See Norton, Page 9*

## Jasmine crashes, customers burn

By Pamela Pfiffner

San Francisco — Buckling under the weight of bitter lawsuits and mounting customer dissatisfaction, direct-sales pioneer Jasmine Technologies Inc. said it will file for Chapter 11 protection this week, and some of its customers could be left out in the cold.

Jasmine laid off 70 of its 100 employees last week. On March 9, two of its top executives, Patrick Silvagnia and Barry Schuler, resigned. Embattled CEO Dennis Chang then hired William T. Bayer, a turnaround specialist who steered Mountain View, Calif.-based Scientific Micro Systems Inc. past the threat of bankruptcy in 1989, as president.

**Dennis Chang, Jasmine founder and CEO, last week saw his once-high-flying peripherals company teetering on the brink of bankruptcy.**

Customers whose disk drives are in for repair or who have placed orders for new products have been told that Jas-

*See Jasmine, Page 8*

## Data basics coming from ACIUS, Claris

By Daniel Farber and Eric J. Adams

Cupertino, Calif. — Claris Corp.'s reign as top gun in the Macintosh general-purpose database market is about to be challenged. Although Claris is readying a major update of its FileMaker II, due to be announced next month, ACIUS Inc. is preparing to enter the market swinging with a new program called File Force.

▶ Already available in France (see MacWEEK, Oct. 17, 1989), File Force is an easy-to-use relational database that inherits much of its design and many of its capabilities from the company's flagship product, 4th Dimension 2.0.

The new program is due to make its U.S. debut at the end of this month, according to sources close

*See Database, Page 8*

## IIfx puts Apple at head of performance pack

By John Battelle

San Jose, Calif. — Apple hopes that the introduction of the Macintosh IIfx, new video display cards and A/UX 2.0 here this week will prove unequivocally that the Mac is a high-performance, cost-effective personal computer.

While the IIfx will be Apple's most expensive Mac, its $8,969 base configuration compares favorably with most machines at its performance level (see MacWEEK, March 13).

In head-to-head tests conducted by the independent National Software Testing Laboratories of Philadelphia, the IIfx outperformed the PS/2 Model 70 486, IBM's top-of-the-line, 80486-based personal computer, in real-life applications.

The NSTL, an independent organization working under contract to Apple, found the IIfx to be 34 percent to 270 percent faster when performing similar tasks in cross-platform, graphics-based programs such as Aldus PageMaker, Microsoft Excel and Adobe Illustrator.

Overall, the IIfx represents Apple's most tightly integrated feat of engineering at a competitive price, said Frank Casanova, whose Apple title is product manager for wicked fast products. He added that future Macs also will benefit from IIfx technology as it trickles down the product line.

"We are going to get a lot more aggressive with our marketing," said Brodie Keast, Apple director of CPU product marketing. "We'll

*See New products, Page 8*

**The price is right?**

| | | |
|---|---|---|
| Mac IIfx* | 1 SuperDrive | $8,969 |
| Mac IIfx | 80-MB hard disk | $9,869 |
| Mac IIfx | 160-MB hard disk | $10,969 |
| Mac IIfx | Logic board upgrade | $2,999 |
| Mac IIfx | 4-MB memory upgrade | $999 |
| Display Card | 4•8 | $648 |
| Display Card | 8•24 | $899 |
| Display Card | 8•24 | $1,999 |

*All Mac IIfx machines come with 4MB of RAM

## LATE NEWS

### Apple says second-quarter outlook rosier

Cupertino, Calif. — Citing market acceptance for modular Macs, "close management of expenses" and improved gross margins, Apple said last week that financial results for the quarter ending March 30 will be better than previously expected. "Compared to the second quarter a year ago," CEO John Sculley said, "demand for our compact products has remained steady, while modular products continue to record significant growth." □

### Canon to bring PostScript to Color Copier

Mountain View, Calif. — Canon U.S.A. Inc. last week announced an Adobe PostScript controller for its 400-dpi Color Laser Copier 500 Imaging System. The copier can be connected to a computer for four-color or monochrome output of pages up to 11 by 17 inches, at a rate of three to 10 pages per minute. The controller will be available later this year. □

NEWSPAPER SECOND CLASS

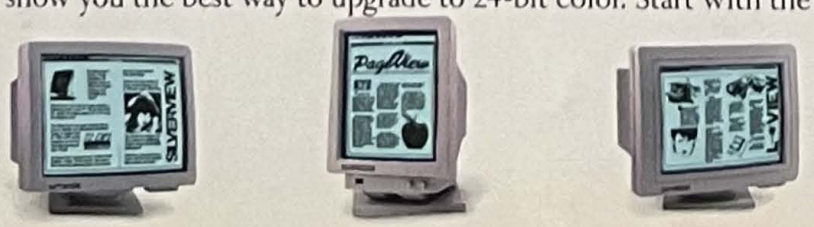
# ColorMAX 8/24. It goes from 8 to 24 bits in $500 flat.

A typical 8-bit color system costs about $6000. But when you upgrade to 24 bits, it can cost you over $9000. And weeks of time, while you wait for your new video card.

Or you can buy a Sigma ColorMAX® 8/24 for $6295. It's the best 8-bit, 19" Trinitron system available for the Mac IIxx family. And you can upgrade it to 24 bits in no time flat. Just by adding $500 worth of VRAM to the existing sockets.

Either way, you get the best ergonomics, with an ultra-high 79 Hz refresh rate. And the only real 72 dpi WYSIWYG. So circles look like circles, not like ovals.

For complete information on ColorMAX, and all our display systems, just call 415/770-0100. And we'll show you the best way to upgrade to 24-bit color. Start with the best 8-bit color.




SIGMA DESIGNS

ColorMAX is a registered trademark of Sigma Designs. All other products are trademarks of their respective owners.

MacRenderMan offers the same technology used to create Pixar's "Red's Dream" animation.

# Pixar's MacRenderMan puts new level of realism on Mac

By Connie Guglielmo

San Rafael, Calif. — The high-end rendering technology that Pixar has been using to produce its award-winning computer animations will soon be available on the Mac.

MacRenderMan, a $795 software package due in May, will let users generate photo-realistic color 3-D images. The program is a Mac version of Pixar's Renderman Interface, which Pixar has been promoting as a scene-description standard — or a way computers should describe pictures.

Animations Pixar has created using RenderMan include "Tin Toy," the first computer-generated animation to win an Academy Award.

MacRenderMan will import images created in Mac 3-D programs and saved in RenderMan Interface Bytestream (RIB) file format. Several Mac developers have already announced support for the RIB format: MacroMind Inc. in its new Three-D rendering program; Strata Inc. in its StrataVision 3d; and Paracomp Inc. in Swivel 3D.

RIB files are spooled into a folder in MacRenderMan and then processed in the background under MultiFinder, according to Pixar. MacRenderMan supports 32-bit color and can render attributes, including surface textures, location of multiple light sources, natural and artificial light, reflected light, shadows, and motion blur.

Processing time can take anywhere from a few minutes to a few hours to a few days, depending on system configuration and the complexity of the image. Images can be saved as PICT, PICS, Encapsulated PostScript and TIFF files.

Pixar also said it will license the technology to Mac software developers interested in embedding MacRenderMan in their applications.

MacRenderMan requires a Mac SE/30 or II series machine with an eight- or 24-bit color display system, a minimum of 4 Mbytes of RAM (8 Mbytes recommended), MultiFinder and Apple's 32-Bit QuickDraw.

Pixar is located at 3240 Kerner Blvd., San Rafael, Calif. 94901; (415) 258-8100. □

# Apple fires two after FBI interview

By Carolyn Said

Cupertino, Calif. — Still hot on the trail of whoever stole its source code last May, Apple fired two contract employees last week after they were interviewed by the FBI.

Walter Horat, 22, and roommate James Hultman, 21, denied involvement with the nuPrometheus League, which sent copies of the source code to MacWEEK among others. "We had a difficult-enough time getting engineering documents relating to our work," Horat said, "let alone source code."

Horat had been testing new CPUs since May, and Hultman worked on a developers magazine and on Apple II peripherals since September.

"This is a police-state activity," Hultman said. "We lost our jobs because we know certain people." The men have acquaintances who have been charged with technology-related crimes, he said, including John T. Draper, known in computer circles as Captain Crunch.

Horat said the FBI claimed a witness had overheard him at a party bragging about perpetrating the nuPrometheus caper.

Horat was arrested last week on a 4-year-old traffic ticket. The arresting sheriff told him that Steven Cook, the FBI agent working on the case, had phoned in the warrant, he said.

Neither Apple nor the FBI would comment. □

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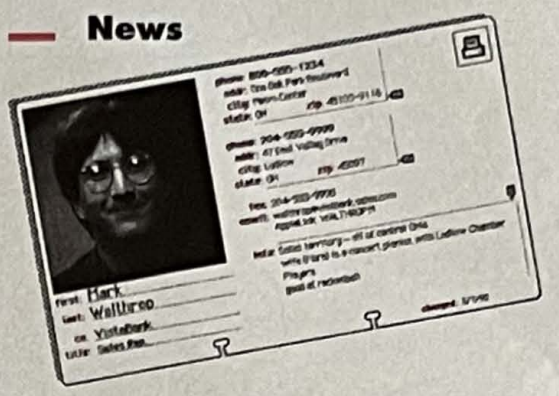



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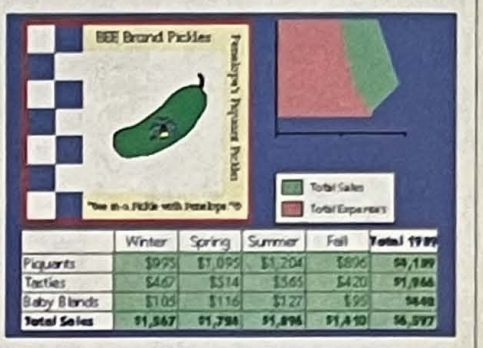



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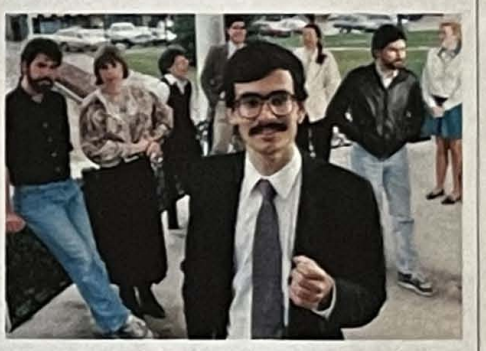


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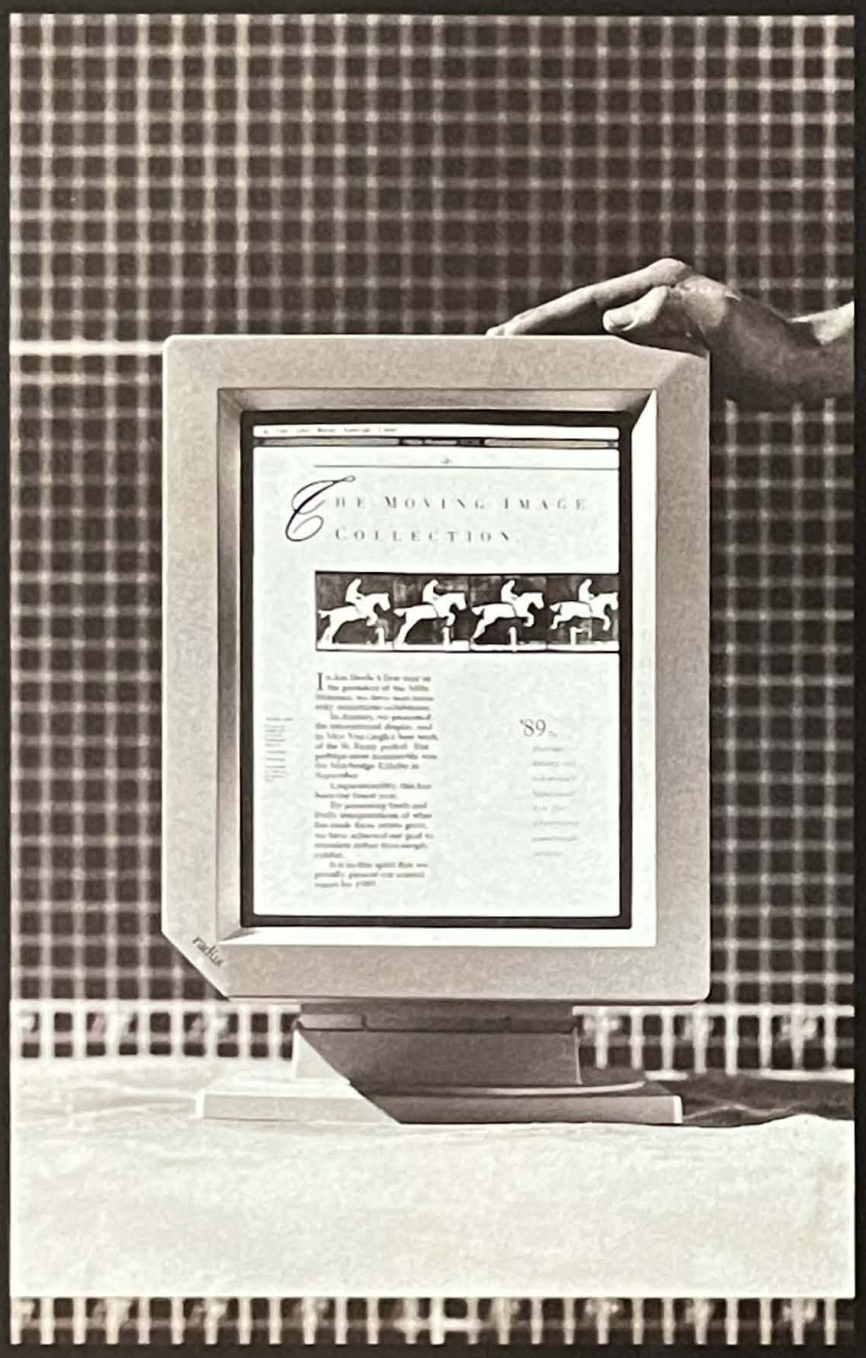

## If You're Considering An Apple Monitor,

Once again, Radius turns display technology on its ear. Introducing Pivot,™ the first display that goes from portrait to landscape with only a gentle push. The new Pivot is the first display that changes orientation, in real time, to match the format of your project. For example, when you're writing a manuscript, you can see a full page in portrait position. And when you switch to spreadsheets, you can rotate Pivot to view all twelve months. Four

radius

*If you live outside the United States, call 408-434-1010 for the name of a Radius International Distributor.
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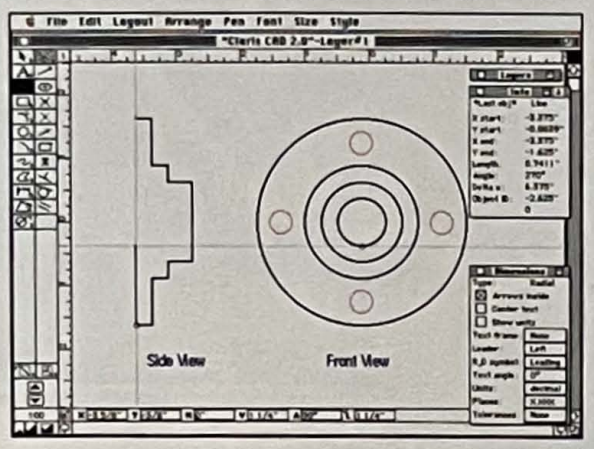
# HERE'S A NUDGE IN THE OTHER DIRECTION.

levels of gray are furnished, with upgrades to 16 levels for near-photographic quality images. Ideal for graphic design and desktop publishing. ● Pivot is compatible with virtually every Macintosh application and may be used with either the SE/30 or Macintosh II family.

● To find your nearby Radius reseller, phone 1-800-227-2795.* Then, before you buy a display for your Macintosh, check out another amazing way to look at things from Radius.

# Claris CAD due for June face lift

## *Version 2.0 offers intelligent guide*




**Claris CAD 2.0 helps users align on-screen objects with Guideliner, a new interface feature. Floating title bars (upper right) can be expanded to full windows that let users adjust parameters without leaving the design environment.**

**By Rochelle Garner**

Santa Clara, Calif. — Claris Corp. is putting a new face on its CAD 2-D drafting package, the company said last week.

Claris CAD Version 2.0, to ship by June at a new price of $899, will include Graphic Guide, an intelligent interface that anticipates the user's intentions. Graphic Guide comprises three components — Preview, Dynamic Modifier and Guideliner — that can be used singly or together.

All make use of the Tools, Modifiers and Methods palettes found in the earlier version, 1.0. Tools are basic drawing primitives such as lines, arcs, circles and dimensions. Modifiers help users find object attributes such as Perpendicular, Tangent and Center Point. Methods lets users define objects in a variety of ways, such as using three points to construct a circle.

▶ The new Preview feature changes the cursor to indicate which Modifier is active and show what will be constructed before the user actually clicks the mouse.

▶ Dynamic Modifier automatically selects a Modifier from the palette based on the cursor's position relative to on-screen objects.

▶ Guideliner displays a grid to aid in alignment when the cursor falls between two objects.

Claris' Graphic Guide is in some ways a look-alike of the Drafting Assistant, a feature of Vellum, the pioneering 2-D design and drafting package from Sunnyvale, Calif.-based Ashlar Inc. But Claris' approach differs in several ways from Ashlar's. Whereas Graphic Guide uses only icons to alert users to possible object relationships, for instance, Vellum's Drafting Assistant shows both icons and text.

Perhaps most important, the Claris system is activated by a cursor's distance from on-screen objects as well as by how quickly the cursor moves across the screen. As a result, the program assumes that a slowly moving cursor is about to invoke a command, while a fast-moving cursor is merely skipping from one part of the screen to another. Ashlar's Drafting Assistant does not react to such variables.

"Claris CAD makes a judgment about what the user wants," said Carl Machover, president of Machover Associates Corp., a CAD consultant in White Plains, N.Y. "I think the technique of monitoring the velocity of mouse motion is a marvelous concept. To me, it is a major step for making CAD much more intuitive."

The new Claris CAD also:

▶ Supports Claris' XTND format. XTND enables text and data to be exported to any database or spreadsheet that supports a tab-delimited format, allowing users to generate a bill of materials. Claris expects XTND, combined with Interapplication Communications in Apple's forthcoming System 7.0, to dramatically enhance Claris CAD's utility with other applications.

▶ Includes floating windows, enabling users to try different construction parameters without having to move in and out of their design environment.

▶ Supports selection filters that let users include or exclude objects by type or color.

Claris CAD 2.0 will require 2 Mbytes of RAM. Upgrades will be $79.

Claris Corp. is at 5201 Patrick Henry Drive, Box 58168, Santa Clara, Calif. 95052; (408) 987-7000. □

# Spinnaker Software rolls out Mac PLUS

**By Raines Cohen**

Cambridge, Mass. — Spinnaker Software Corp. will begin shipping Version 2.0 of PLUS for the Macintosh, its HyperCard-like applications-development environment, this spring, the company said last week.

The next version of the cross-platform, "object-oriented hyper-programming environment for developing custom information-management applications" will be shown in public for the first time at next month's Macworld Expo in San Francisco.

PLUS can convert HyperCard stacks, adding color, larger card sizes and other extensions. Version 2.0 of PLUS for the Mac has the same file format as the versions for OS/2 and Windows 3.0, which the company said will ship this summer. Prototypes running in a multiplatform setting were first previewed last fall (see MacWEEK, Nov. 21, 1989).

Industry observers have speculated about how Apple might react to a product that brings many of the advantages of its patented, proprietary HyperCard software to competing platforms. But Kathleen Gill, Spinnaker director of product marketing, said, "We have been extraordinarily careful to examine and respect other people's copyrights and patents."

**Spinnaker's PLUS 2.0 for the Macintosh not only converts HyperCard stacks but colorizes and extends them.**

While PLUS 2.0 for the Mac works with HyperCard externals, it offers further flexibility in the form of Software Slots, which allow object-oriented extensions to the PLUS environment, said Wolfgang Kitza, founder of Format Software GmbH of Cologne, West Germany, the company that created the program. He said Spinnaker will provide sample source code and program-interface definitions in C but that any compiled language can be used to create slots.

PLUS 2.0 for the Mac will be offered for an introductory price of $199.95, which will increase when the IBM PC versions are available this summer, the company said.

Spinnaker Software Corp. is at 1 Kendall Square, Cambridge, Mass. 02139; (617) 494-1200. □

# Farallon shows multi-Mac version of Timbuktu

**By John Battelle**

Emeryville, Calif. — Now there are more ways than one to see Timbuktu. Farallon Computing Inc. last week introduced a multi-Mac version of its Timbuktu network screen-sharing software.

Unlike previous releases, Timbuktu Version 3.1 allows one Mac to control two or more others at a time. Each screen session is contained in a separate, resizable Timbuktu window. In previous versions the remote Mac's display took over the viewer's entire screen, but the new Timbuktu gives the viewer access to the local Mac desktop and applications even while logged onto other machines. All windows are updated "live," the company said, regardless of which is selected.

Timbuktu lets users access the processing power of more than one computer at a time, according to Tim Fredel, product manager. For example, he said, a user can print a document from a remote Mac while working locally on another file. The number of live windows is limited only by memory, he said.

Version 3.1 also can transfer files up to seven times faster than the previous release, according to Fredel.

Among several interface enhancements, a new pull-down menu gives users an easy way to see who may be logged onto their machines, to limit access to them and to set other preferences.

Timbuktu 3.1 will ship in April for $149. Software upgrades will be free; new manuals will cost $10. Users of Timbuktu 2.0 can upgrade for $50. Timbuktu/Remote, Farallon's modem-access screen-sharing utility, remains at Version 1.01.

Farallon Computing Inc. is located at 2000 Powell St., Suite 600, Emeryville Calif. 94608; (415) 596-9100. □

## For the Record

The EASYlog MicroPhone script for Dialog is not available through Dialog or Software Ventures Corp. as implied in the March 6 Graphic Arts story, "On-line costs." It can be obtained from Steve McIntosh at 32 W. Anapamu, Suite 200, Santa Barbara, Calif. 93101 or (805) 963-4095, as can MicroPhone scripts for NewsNet and Knowledge Index ($45 each), or as shareware through many on-line services.

The price of the Matrix ProColor from Agfa Matrix given in the Feb. 27 comparative review of desktop film recorders was out of date. The price is $5,995.

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BPA

# More Rave Reviews for the #1 SQL Database.

PC WEEK

## Oracle for Mac Solves DBMS Puzzle

### *SQL/HyperCard Combo Produces Sophisticated Applications*

By Susan Janus

Database giant Oracle Corp., of Belmont, Calif., recently rounded out the list of platforms supported by the company's relational database-management system (DBMS) with the release of Oracle for Macintosh.

The new Mac DBMS teams the power of Oracle's Structured Query Language (SQL) with HyperCard's customizable and easy-to-use interface.

This combination allows Mac developers to create sophisticated applications that appear simple to users—a unique software-development opportunity unavailable on any other platform, including the PC, according to early corporate users we contacted.

In addition, users said, the network version of Oracle for the Mac allows the advantages of the HyperCard interface to serve as a front end to existing corporate relational databases residing on other platforms, such as mainframes and minicomputers.

Consequently, the Mac software has great potential for su[illegible]

oping database-manageme[illegible] systems to connect departmental Macs to larger systems. Jeff Menz, a systems analyst for a scientific R and D organization, is currently using Oracle for Macintosh to develop a system that will give the company's numerous Mac users access to an Oracle database running on a VAX. Using the networking version, Menz will link departmental AppleTalk networks to the VAX over a TCP/IP network.

**Oracle Provides the Groundwork**

The key benefit of Oracle's product is that "all the fundamental technical work—the protocols, the compatibility with the AppleTalk network—has been done by Oracle," Menz said. "I just have to build the HyperCard interface and do the database design work."

The result will be an Oracle relational-database application on the VAX with a HyperCard front end that Mac users feel comfortable with, he explained. Also, the company will have one logical relational database instead of numerous fragmented local databases. This allows tighter security, improved data integrity and better performance, he added.

### Oracle for Macintosh

*DBMS Brings New Power and Face to Mac Application Development*

**WHAT CORPORATE BUYERS LIKE**

- Offers SQL capabilities
- Uses HyperCard to mask complexity of database applications
- Serves as front end to relational databases on other platforms
- Can link different Oracle database platforms with network version
- Provides good documentation and support

"ORACLE for Macintosh is a well-designed product...a programmer can, with just an hour's training, create a database on a host with a simple Macintosh interface in three minutes—honest." ★★★★

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## Jasmine

From Page 1

mine intends to ship both within six to eight weeks. Customers have the option of waiting for the product or requesting their money back, but there is no guaranteeing when either will arrive, company sources said.

"We are going to repair and return all drives we have," Bayer said, but he acknowledged that because of "extreme cash-flow problems," the company does not have enough new units or repair parts in stock. Sources say that as many as 2,000 drives are awaiting repair.

Customers who have paid for a product with a credit card should cancel the order with the credit-card company immediately, leaving it to the card company to hash out a settlement with Jasmine, Bayer advised. Those who paid by check or money order should be repaid eventually under the terms of Chapter 11.

Filing for court protection lets Jasmine operate while protecting it from its creditors. Selling the company will be permitted and liabilities, including lawsuits, will be settled by dividing the proceeds of the sale among the company's outstanding debts, Bayer said. Creditors — including customers — would be paid a percentage of the monies owed them.

In San Francisco, Jim Koulias, computer-systems manager at Colossal Pictures, is faced with a different problem: Jasmine collected twice for the same DirectDrive 180, so although he has his hard drive, Koulias must wait to be reimbursed. Even then, under the terms of Chapter 11, he may not be paid the entire $1,464 owed him.

Jasmine, which claimed revenues of more than $30 million in 1988, has amassed nearly $8.5 million in debt over the past three years. It has recently been losing $1 million a month, sources said.

The company is actively seeking investors, and several prominent drive manufacturers and other vendors have expressed interest in the company, according to sources.

"The only way we can attract the right investors is to continue to operate," Bayer said.

Founded in 1986 by Chang, Mark James and Alan Brunner, Jasmine quickly developed a reputation for low prices, fast service and knowledgeable technical support. But a series of management firings and the collapse of a supply agreement with Rodime Systems Inc. of Boca Raton, Fla., brought on a series of highly publicized and still-unresolved lawsuits.

James and Brunner last week added yet another legal entanglement, filing a cross-complaint against Jasmine, Chang and others. □


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*Camera-ready master for this advertisement was created on a Printware 720 IQ at 1200 × 600 dpi.*

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## Database

From Page 1

to the company. Pricing is expected to be between $300 and $400.

Targeted at the same market as the new FileMaker, File Force reportedly can create a filing system with up to 10 files and relate them automatically. The program also is expected to include a series of templates and a forms generator with a palette of layout and drawing tools. Additionally, File Force supports graphing, reporting, mail merge and the creation of mailing labels.

File Force buyers will be offered an upgrade path to 4D 2.0, sources said.

File Force is up against a formidable competitor. FileMaker II now commands a 70 percent share of the market for flat-file database software, according to research firm International Data Corp. of Framingham, Mass.

▶ The new version of FileMaker, the first major overhaul of the program in more than a year, will offer faster processing, a larger record capacity, a revamped interface and HyperCard-like features. This will enable users to create custom interfaces with the familiar buttons and icons of HyperCard, sources said.

The latest version "really modernizes the interface and fixes existing annoyances," said a developer who has seen the upgrade. "Everything we asked for, we got."

In addition, the new version will include a draw utility and a hypertext scripting language that will enhance reporting capabilities. The search editor and look-up functions also have been improved.

"I hope they improve the draw capability, but it would be a mistake to make it more HyperCard-like. FileMaker is already very easy to use," said Kim Hunter, a FileMaker developer and president of Acropolis Software in Laguna Honda, Calif. □

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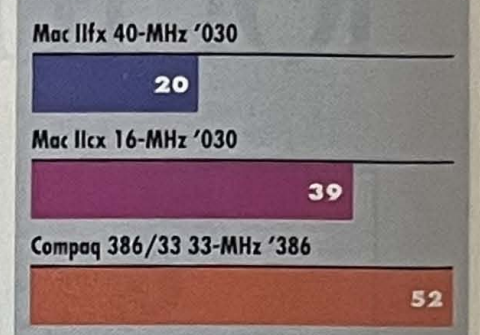


*Macro does variety of reads, writes, "what if" graphs, recalcs, etc.
**Excel was run under Windows for Compaq.

## New products

From Page 1

take on anybody with this product."

"Apple has to stay competitive on the high end," said Peter Rogers, an analyst at Robertson Stephens and Co. in San Francisco. "New products that push performance are important to the markets Apple plays in."

The IIfx features three new subsystems on its logic board that, taken together, set it far apart from previous Macs and provide an "architectural stake in the ground" for future technologies as they develop, said Casanova.

A 40-MHz 68030 processor and 68882 coprocessor, backed by a 32-Kbyte static RAM cache, give Apple claim to the fastest clock speed in the personal computer industry (see MacWEEK, March 6).

An I/O subsystem includes a custom SCSI DMA (direct memory access) chip capable of 3 Mbytes per second data throughput. Two custom I/O processors offload processing of inputs from the Apple Desktop Bus, floppy drives and serial ports from the main CPU. A processor direct slot, a superset of the SE/30's PDS, sits behind the IIfx's NuBus and provides third parties with direct access to the processor system.

The new Display Card 4•8, 8•24 and 8•24 GC will simplify Apple's video line and standardize the modular Mac platform on 24-bit color, according to Mark Gonzales, video-card product manager (see story, Page 1).

A/UX 2.0 provides several major improvements over Version 1.1.1 (see MacWEEK, March 6). The most striking new feature is the layering of the Mac operating system over the Unix-command shell. A/UX can now support Unix, Macintosh and X Window applications running concurrently on the desktop. "It's the Macintosh with Unix standards underneath," said Carol Clettenberg, Apple's A/UX product manager.

A/UX 2.0 is expected to ship by midyear, but pricing has not been set.

Apple also introduced the $229 Extended Keyboard II, available now for SE and II machines.

The IIfx will be immediately available worldwide, the company said. A base model with 4 Mbytes of RAM and one SuperDrive will cost $8,969. A model with 4-Mbytes of RAM and an 80-Mbyte hard disk is $9,869, and a model with a 160-Mbyte hard disk is $10,969.

Apple will provide a logic board upgrade for its estimated installed base of 400,000 Mac II and IIx machines. The IIfx Logic Board Upgrade will be aggressively priced at $2,999. Those who upgrade will also have to purchase at least 4 Mbytes of the IIfx's special 64-pin DRAM, which Apple sells for $999. Third parties, however, will sell the DRAM at $100 per megabyte, according to Keast. □

## Video cards

*From Page 1*

upgraded to 8•24 functionality for $349 by inserting additional video RAM (VRAM) in SIMM slots. The 8•24 will ship immediately.

▶ The $1,999 Display Card 8•24 GC combines the capabilities of the 8•24 with QuickDraw acceleration provided by a programmable Am29000 RISC (reduced instruction set computing) chip.

The card includes 2 Mbytes of VRAM and a SIMM slot for additional dynamic RAM to handle off-screen bit-map buffering. It supports NuBus block transfer and can provide acceleration for multiple display cards, but only one 8•24 GC may be used in any one system.

The 8•24 GC performs QuickDraw routines five to 30 times faster than its unaccelerated cousins, making manipulation of 24-bit images similar to the manipulation of one-bit images in MacPaint, according to Mark Gonzales, Apple's product manager for video cards. Like the 8•24, however, it does not support 24-bit color on large-screen displays. The 8•24 GC will ship this summer.

▶ Apple will continue to support the $199 Monochrome Video Card as a low-end, entry-level solution.

According to sources close to Apple, the company is delaying shipments of its 4•8 card until its present inventory of four- and eight-bit video cards is reduced. Apple officials claim availability is constrained by production ramp-ups and sourcing of parts and would not comment on possible discounting of current inventory.

Apple is positioning QuickDraw as its major advantage over competing systems from IBM and IBM compatibles makers. "The QuickDraw software standard allows us to be hardware-independent," unlike the IBM world, where hardware-based standards make progress difficult, Gonzales said.

Apple's Display Card 8•24, at $899, will compete directly with the $799 ColorBoard 264 from Santa Clara, Calif.-based RasterOps Corp. and the $995 ColorCard/24 from Sunnyvale, Calif.-based SuperMac Technology Inc.

Apple will be touting additional features of its cards, such as Apple convolution (a means of controlling display flicker), support for multiple monitors, and support for underscan and overscan, as its competitive advantages.

The cards will also facilitate NTSC (National Television System Committee) output, but only through converter boxes that will be offered by third parties. RasterOps will ship an NTSC box compatible with Apple's cards at the April Macworld Expo, officials said.

Both SuperMac and San Jose, Calif.-based Radius Inc. offer QuickDraw accelerators. Radius could suffer from the introduction of the 8•24 GC, as its $795 QuickColor is an additional NuBus card dependent on more expensive Radius video cards.

"We are committed to providing a single-sourced, high-end color solution," said Ed Colligan, director of marketing for Radius.

The third-party companies, however, will continue to have large-screen 24-bit acceleration to themselves. The Apple announcement "will impact our business initially, but more than likely it will expand the market by endorsing QuickDraw acceleration," said Steve Edelman, founder and chief scientist for SuperMac.

SuperMac offers accelerated 13-inch, 24-bit color for $1,498, $500 less than the 8•24 GC. Apple's 8•24 cannot be upgraded to support acceleration.

RasterOps is also rumored to have a 24-bit color accelerator waiting in the wings for a Macworld debut.

While the combination of the new Mac IIfx, the 8•24 GC and A/UX 2.0, Apple's latest version of Unix, conjures up visions of a machine that could compete with most graphics workstations, the current version of the 8•24 GC will not work in accelerated mode with A/UX. Future versions of the products will address this, Apple said. □

## Norton

*From Page 1*

advanced tools for expert users with a level of ease of use missing from current competitors.

A source close to Norton said the whole program is designed to be useful on a daily basis, even by novices. An extensive hypertext help system is built in.

The program is expected to ship next month with a price tag of $120.

Norton Disk Doctor — the part of the main Norton Utilities application designed for repair of damaged disks — analyzes disk, directory and file contents, and can be set to make repairs automatically. The Unerase module undeletes files, and Format Recover maintains backups of directory information to recover crashed or erased disks.

Among other features:

▶ A Control Panel device (cdev), FileSaver, offers quick recovery of deleted files.

▶ The Norton Disk Editor provides hex and ASCII searching and editing of disk and file contents and header information. It maps out disk structures and displays directory information in easily readable form, sources said.

▶ Speed Disk, a stand-alone application, defragments files to optimize disk performance. It displays a color map of disk sectors and reportedly includes protection against data loss, even if power is interrupted.

▶ FastFind, a desk accessory, provides file location and browsing. Unlike the forthcoming On Location from ON Technology Inc. of Cambridge, Mass., it will not require pre-indexing. "In my eyes, FastFind is the gem in Norton Utilities," one beta tester said. "It is perhaps 100 times faster than Apple's Find File, and more reliable. I can find any file on a CD-ROM in 30 seconds, and much less than that on a hard disk."

▶ KeyFinder, another DA, helps users locate and enter hard-to-remember Option-key combinations, accented characters and special symbols not normally typable.

▶ Directory Assistance, a Startup document (INIT), enhances the Open and Save As dialog boxes, like the popular Boomerang and Shortcut utilities. Norton reportedly will claim that it can locate any file on an 80-Mbyte disk in two seconds.

The Norton Guides, a separate product to be announced this week, is a programmers reference guide. It includes Mac Toolbox interfaces, error codes and general Mac technical information. Hyperlinks allow rapid cross-referencing of topics, simply by clicking on a word.

Peter Norton Computing Inc. is located at 100 Wilshire Blvd., Suite 900, Santa Monica, Calif. 90401; (213) 319-2000. □

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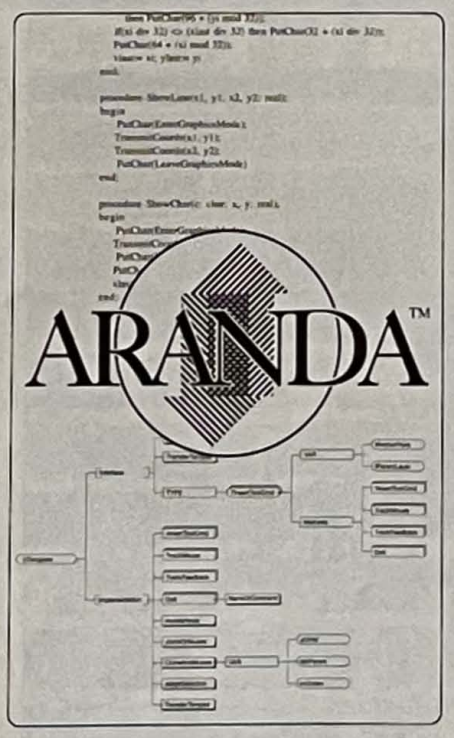


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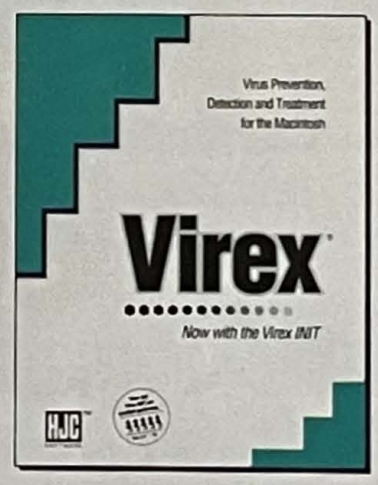


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# NRC's gateway line connects Mac to TCP/IP nets

By John Battelle

San Jose, Calif. — Network Resources Corp. last week introduced a suite of gateway products designed to integrate Macs with TCP/IP networks.

NRC's new MultiGate line is built around the Series 2000 routers introduced by the company last year. Renamed MultiGate 2000, the improved routers work with three new components — MultiGate Access, MultiGate Mac and MultiGate Manager — to provide a complete Mac-to-TCP/IP connectivity solution, according to the company.

▶ MultiGate Access is software that runs on a Mac and provides file transfer, terminal emulation and editing of host-based files. It will work with NRC's routers or with those from Provo, Utah-based Novell Inc. or Cambridge, Mass.-based Cayman Systems Inc. Due in May, MultiGate Access will be $79.95 per user.

▶ MultiGate Mac is the first software-only router to provide full Internet Protocol (IP)-to-IP and AppleTalk-to-IP routing, according to the company. It also supports AppleTalk-to-EtherTalk (Apple's implementation of Ethernet) routing. It requires a Mac II and will ship in May for $795.

▶ MultiGate Manager is network-management software that runs on a Mac II. It provides for configuration and security of NRC devices on Ethernet LANs, as well as performance analysis. Future releases will support most network devices that adhere to standard protocols such as SNMP (Simple Network Management Protocol), the company said.

A scaled-down version of MultiGate Manager is included in NRC's MultiGate 2000 line of routers, which is shipping now. MultiGate Manager will ship in May.

NRC is touting its hardware-based MultiGate 2000 line as a high-performance AppleTalk-to-TCP/IP router. The products are available for Ethernet, fiber or broadband media in three configurations. The $1,195 AT1 option connects one AppleTalk device to an Ethernet backbone, the $1,395 AT2 connects two devices, and the $2,395 LT option connects an entire LocalTalk LAN to an Ethernet backbone.

Network Resources Corp. is located at 2450 Autumnvale Drive, San Jose, Calif. 95131; (408) 263-8100. □


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# Beefed-up version of PLP II joins GCC printer lineup

By Henry Norr

Waltham, Mass. — Just three months after introducing its PLP II 300-dpi printer, GCC Technologies Inc. last week rolled out a beefed-up companion device it calls the PLP IIS.

With a price tag of $1,899 — $500 more than the PLP II — the PLP IIS offers a faster and more durable print engine, more memory and an extended outline-font library.

The unit announced last week uses Oki Electric's heavier-duty OL-800 engine, which is rated at eight pages per minute; the engine in the PLP II, introduced in December, is Oki's four-page-per-minute OL-400. The new module is equipped with 1 Mbyte of memory to speed processing of long documents and free the Mac during printing of multiple copies of a single page. In the earlier model, the memory was an optional add-on.

The PLP IIS also comes with QuickEnvelope, an envelope-printing desk accessory that GCC will now also market separately at $59, and with GCC's Fonts Plus package, which is available to PLP II users for an extra $239. Fonts Plus contains seven Bitstream outline-font families that supplement the six families shipped with both models. GCC's driver supports scaling from 25 percent to 400 percent and text rotation.

Additional typefaces are available from GCC in two packages priced at $239 each. Users running Adobe Type Manager can also print any compatible PostScript font.

Like the earlier PLP II but unlike the original PLP, the new model cannot be upgraded to PostScript. Nor can it be shared over an AppleTalk network.

Both PLP II models are based on solid-state LED print technology. To direct the light beam that exposes the photosensitive drum, they use an array of miniature LEDs rather than the rotating mirror used in standard laser printers from Apple, Hewlett-Packard Co. and other manufacturers. The result, according to GCC, is more consistent output quality and greater reliability.

GCC is at 580 Winter St., Waltham, Mass. 02154; (617) 890-0880; (800) 422-7777. □

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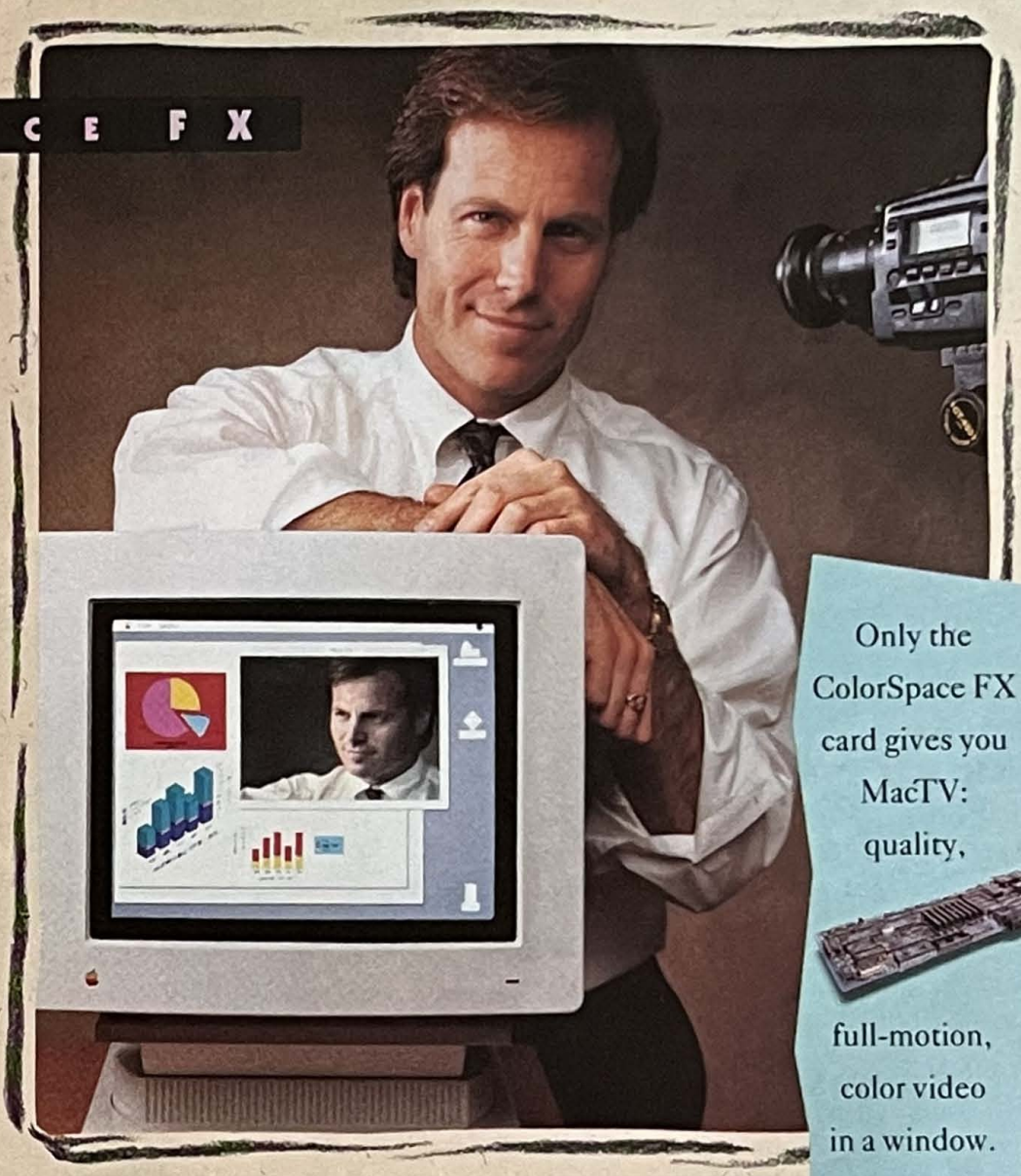

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# SuperMac monitors use Apple cards

By John Battelle

Sunnyvale, Calif. — Riding on the coattails of Apple's display-cards announcements (see story, Page 1), SuperMac Technology will this week introduce new 21-inch color and gray-scale monitors that it said can be driven by the Apple cards.

The $4,799 Color Two Page Display and $1,799 Platinum Two Page Display offer 1,152-by-870-pixel resolution at 77 dpi with a 75-Hz refresh rate. SuperMac is touting its new monitors as flexible alternatives to monitors that are tied to specific boards. Any card that can drive Apple's 21-inch Two Page Display — including Apple's original card, the new Display Cards 4•8, 8•24 and 8•24 GC, and any others that conform to Apple timing — can drive the new displays, SuperMac said.

No existing cards will operate the new monitors in 24-bit mode. SuperMac itself markets no cards for its new monitors, but some are under development, officials said.

The new monitors, which will ship by the end of the month, include a tilt-and-swivel base, an anti-glare panel, brightness and contrast controls, and a one-year warranty.

SuperMac is at 485 Potrero Ave., Sunnyvale, Calif. 84086; (408) 245-2202. □

A retooled version of MacVision, a $499 black-and-white video digitizer, works with all Macs.

# Koala MacVision due for first hardware upgrade

By Connie Guglielmo and Raines Cohen

San Jose, Calif. — A retooled version of MacVision, a low-cost video digitizer developed by Apple's Bill Atkinson, is due in April from Koala Technologies Inc.

The hardware upgrade, the first in six years, adds a host of new capabilities to the gray-scale video digitizer, including support for the Mac IIci and Mac Portable. This makes it one of the only digitizers to work with any Mac equipped with 1 Mbyte of memory, according to Earl R. Liebich, director of marketing.

Currently in beta testing, MacVision will sell for $499, up $100 from its original price. It will be demonstrated at the Macworld Expo in San Francisco next month.

An external box that connects to the Mac using an adapter/power module, MacVision converts NTSC (National Television System Committee) video images for display on the Mac. The new version also will have built-in support for PAL, the European video standard.

Using a mode Koala calls QuickView, images with up to 256 gray levels can be captured for preview in six seconds at a resolution of 320 by 240 pixels, the company said.

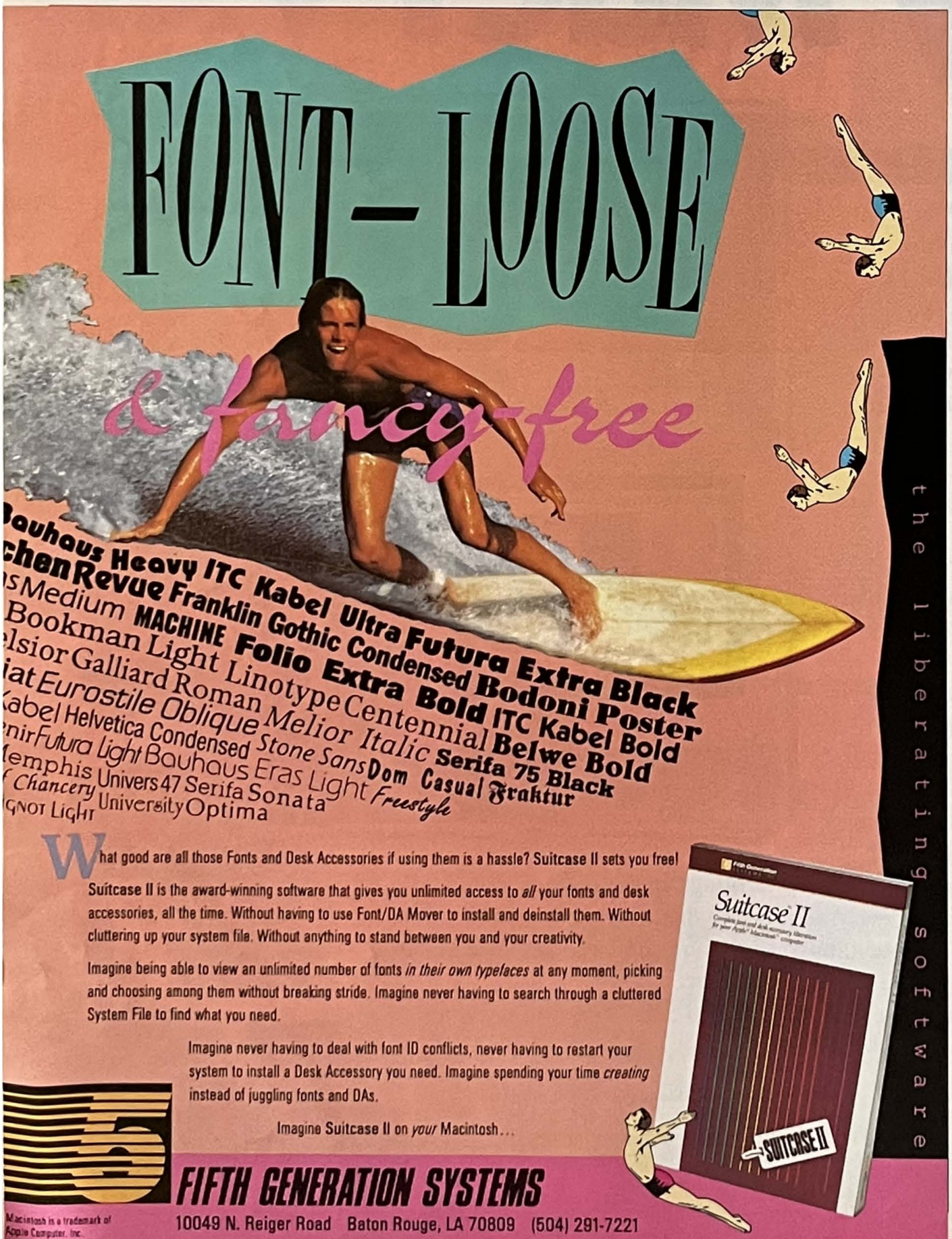
There are four options for full-scan mode. A normal full scan, at a resolution of 640 by 480 pixels, takes about 24 seconds. Enhanced full scan picks up greater detail in a 640-by-480-pixel image and takes 40 to 48 seconds. An interpolated scan, which takes about 24 seconds, is an average of the two passes the digitizer makes to capture an image. The field scan offers half the resolution and scanning time of the normal scan. "It depends on the kind of effect you want. If you want a high-quality image, you would choose the enhanced scan. If you want less detail, then maybe interpolated," Liebich said.

MacVision will ship with new software that offers image-editing tools and effects, including Crop, Smooth, Soften, Sharpen and Posterize. Images can be exported in TIFF, Encapsulated PostScript, PICT and MacPaint formats. Images can be imported for editing in TIFF or RIFF, Letraset's version of TIFF.

Beta-tester Don Stoll, marketing services manager for Nienhaus Montessori USA Inc. of Mountain View, Calif., is using MacVision to make product brochures for the company's mail-order business. "If it weren't for the Mac and MacVision, we would have a hard time producing these," he said.

MacVision owners can trade in their boxes and upgrade their software, but the upgrade policy and pricing have not been determined.

Koala Technologies Inc. is at 70 N. Second St., San Jose, Calif. 95113; (408) 287-6278. □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Bauhaus Heavy ITC Kabel Ultra Futura Extra Black
chen Revue Franklin Gothic Condensed Bodoni Poster
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# XPress 3.0 features in Visionary upgrade

By Carolyn Said

Boston — In step with Denver-based Quark Inc., Scitex America Corp. will release in June two new versions of Visionary, the QuarkXPress-based package that links to Scitex's high-end pre-press system.

Visionary 3.0, announced at the Seybold Seminars '90 conference here this month, will incorporate features of the forthcoming XPress 3.0, such as rotation, grouping of elements and the capability to use multiple templates (see MacWEEK, March 6).

Scitex said it will also add new features, including the capability to create color blends, custom grids, enhanced close cropping, picture parameters, and additional scanning instructions such as scaling, brightness and contrast. Visionary 3.0 will add thermal printers to the output devices it can use for proofing.

The company is also developing Visionary Jr. 3.0, a lower-cost version with fewer graphics-editing capabilities that is intended for editors who need to make text changes.

Pricing has not yet been set for either product.

The Scitex Graphic Arts Users Association, which distributes software for Bedford, Mass.-based Scitex, is located at 305 Plus Park Blvd., Nashville, Tenn. 37217; (615) 366-1798; (800) 858-0489.

Scitex America Corp. is located at 8 Oak Park Drive, Bedford, Mass. 01730; (617) 275-5150. □

# Electronic stripping from the desktop

By Carolyn Said

Boston — Ultimate Technologies Inc. this month unveiled Mac Poststrip, a new software package that brings electronic stripping to the Macintosh.

Stripping — the assembly of color separations and other elements into a complete page, and of pages into finished signatures — remains one of the costliest and most time-consuming phases of the publishing process. Mac Poststrip and Ultimate's IBM PC product, Poststrip, are the only personal computer-based electronic stripping applications, the company said.

Mac Poststrip users can manipulate all variables related to press type and size, folding, collating and binding, the company said.

The program, which was introduced at the Seybold Seminars '90 here, can output signature proofs to laser printers and finished signatures to PostScript typesetters, RC paper (used to make negatives and burn plates) or silver master-plate material. Mac Poststrip will support all color-separation features of the desktop publishing program that generated the pages.

Available this week, Mac Poststrip sells for $3,995 for use with any one Mac desktop publishing program, $9,995 for use with any three DTP programs, and $19,995 for use with unlimited DTP programs on the Macintosh or PC.

Ultimate Technologies Inc. is located at 4980 Buchan St., Suite 403, Montreal, Quebec, Canada H4P 1S8; (514) 733-1188. □

# Cabletron offers fiber-optic cards

By John Battelle

Rochester, N.H. — Cabletron Systems Inc. wants every desktop to get its daily dose of fiber.

The company this month introduced its DNI line of fiber-optic networking cards, which connect Macs to fiber-based Ethernet networks.

While the cards do not support the emerging FDDI (Fiber Distributed Data Interface) networking standard, Cabletron officials tout them as an ideal interim solution for companies that want to migrate to full-blown FDDI when it becomes a viable option.

Del Klingensmith, director of information services at Case Western Reserve University in Cleveland, said that the DNI cards allow his university to install fiber for its mixed network of Macs and IBM PCs. "We've been working on a completely fiber network, and the availability of [the DNI] cards was ideal," he said.

Cabletron also offers DNI cards for IBM PCs and compatibles and for the IBM PS/2 Micro Channel Architecture. The Mac SE, SE/30 and II cards cost from $899 to $949.

Cabletron Systems Inc. is located at 35 Industrial Way, P.O. Box 6257, Rochester, N.H. 03867; (603) 332-9400. □

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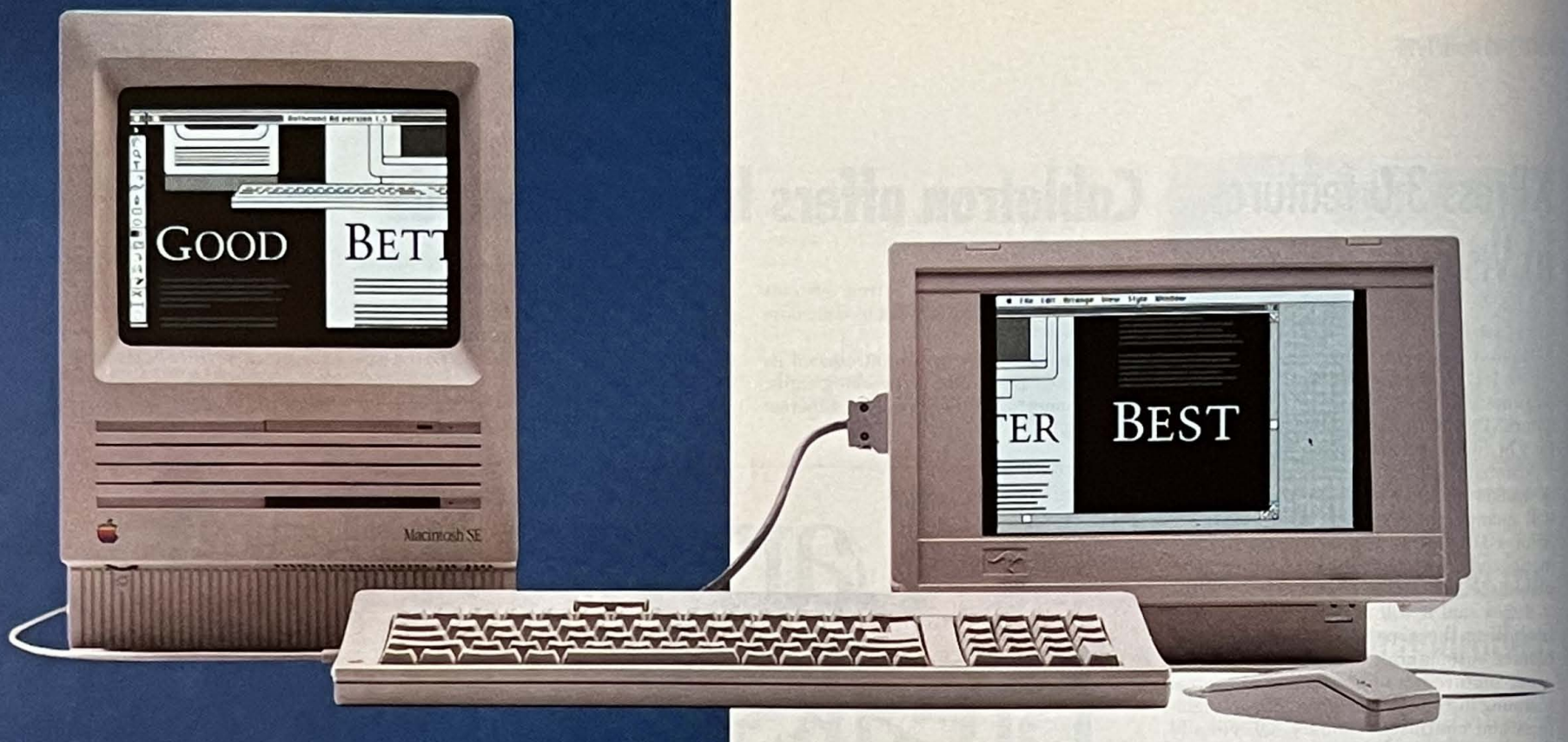


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The Macintosh® SE and Macintosh Plus from Apple® do just about anything that a *good* business computer can do. Both are capable of running thousands of *powerful* software applications, including some applications that no other personal computer can handle.

But what's really unique about the Macintosh SE and Plus is the world's most friendly user interface. End of story.

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Introducing the Outbound™ Laptop System, no small idea when it comes to expanding the power of your Macintosh SE or Macintosh Plus. Sharing your most essential business information between your Macintosh desktop and your Outbound Laptop is only a *point and click* away.

When docked*, your Macintosh and Outbound function as a single unit. Drag any icon from your Macintosh SE or Plus over to your Outbound Laptop System. Or take files back the other way without using a single utility. Together they can do some amazing things to make your Macintosh experience — twice as rewarding.

Like getting the job done in half the time by doubling operating speed; or making your work all the more visible with the addition of the Outbound's backlit LCD — which works with your Macintosh display. With the increase in system memory and storage capacity, you get to expand your desktop that much further.

But to properly size up the Outbound's real potential requires a slightly more *detached* point of view. On its own, the Outbound Laptop gives you the freedom to express yourself while on the road — becoming a standalone Laptop and running all of your favorite Macintosh applications. And because of Outbound's innovative silicon disk — your software will perform at a recognizably quicker pace, which is especially important if you happen to be on the fast track.

Weighing in at just over 9 pounds (battery included), the Outbound Laptop combines a sleek, compact design with all of your favorite Macintosh features — yet it's small enough to use in the crowded coach section of an airplane.

So if you work under slightly confined conditions — on a train or even in rush hour traffic — the Outbound Laptop is the *best* way to get the job done.

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**4840 Pearl East Circle**
**Boulder, CO 80301**

* The Outbound Laptop requires that an authorized Outbound reseller relocate the ROMs from your existing Macintosh SE or Macintosh Plus. Your Macintosh SE and Plus are fully operational as long as the Outbound Laptop is docked.

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Brooks Hall, Booth-5542.

# Network managers get new analysis tools

## *Monitoring for Ethernet, Novell*

**By John Battelle**

Network administrators looking for analysis and monitoring tools finally have some good news. A recent flurry of activity concerning network management tools has brought new offerings into this less-than-crowded field.

▶ The AG Group this week will introduce EtherPeek, a Mac software application that analyzes and monitors Macintosh Ethernet networks. It is a software-only solution that requires no installation and runs on any Mac II. A system administrator can carry just the floppy to a remote site to troubleshoot the network, according to the company.

EtherPeek comes preconfigured to decode AppleTalk and most common Internet Protocol packets and supports most popular Mac Ethernet products. It will ship this week for $475.99.

▶ Neon Software Inc. of Lafayette, Calif., is readying NetMinder, a software-only Ethernet monitoring program. Supporting Ethernet cards from Novell Inc., Apple and Asante Technologies Inc., NetMinder will capture and examine Ethernet data packets.

Neon is touting NetMinder as a low-cost analysis tool that uses the power of the Mac interface. It will ship in May for $495.

▶ Network General Corp. introduced an advanced version of its Sniffer network monitoring and analysis tool. Sniffer is a portable hardware analyzer that supports LocalTalk, Ethernet, token ring and ArcNet, among others.

New features of Sniffer include alarms for network malfunctions, and report-writing and network-performance-analysis tools.

Network General offers Sniffer in a variety of configurations, all running under MS-DOS. Prices vary depending on platform but average about $20,000.

▶ MultiGate Manager, a software package announced this week by Network Resources Corp. in conjunction with its MultiGate routers, runs on any Mac II and will support non-NRC devices in a future release, according to the company.

▶ Novell Inc. of Provo, Utah, recently created an entire division devoted to network-administration and analysis tools. The LANalyzer Products Division is responsible for Novell's LANalyzer, specialized hardware and software that analyzes NetWare, TCP/IP and DECnet protocols.

The division earlier this year announced LANtern, a remote network monitor that employs the Simple Network Management Protocol (SNMP). The LANtern is a "proactive" device that sits on the network and monitors traffic. It can be set to alert network managers of alarming disturbances in the network. LANtern is available now for $4,495.

Novell also announced recently that NetWare 386, its multiplatform networking software, will include a naming service and remote-management features.

The AG Group can be reached at Station B, P.O. Box 26728, San Francisco, Calif. 94126; (415) 826-7664. Neon Software Inc. is at 1009 Oak Hill Road, Suite 203, Lafayette, Calif. 94549; (415) 283-9771. Network General Corp. is at 4200 Bohannon Drive, Menlo Park, Calif. 94025; (415) 688-2700. Network Resources Corp. is at 2450 Autumnvale Drive, San Jose, Calif. 95131; (408) 263-8100. Novell Inc. is at 122 East 1700 South, Provo, Utah 84606; (801) 379-5900. □

MultiClip, Olduvai's Clipboard-enhancement program, lets users keep multiple text and graphics selections for pasting. Version 2.0 has support for 32-bit color, naming of ClipFrames and a pop-up menu for selection.

# Olduvai ships upgraded MultiClip

**By Henry Norr**

South Miami, Fla. — Olduvai Corp. last week shipped a new and "totally rewritten" version of MultiClip, its clipboard- and scrapbook-enhancement utility.

The $99 Startup document (INIT) lets users keep multiple text selections and graphics in separate, pastable "ClipFrames." The new version, 2.0, promises better compatibility with other INITs and applications, full compatibility with 32-bit Color QuickDraw, better memory management and faster speed.

New features, Olduvai said, include full printing capabilities, including output of ClipFrame thumbnails; the ability to name ClipFrames and search by name; a pop-up menu of available frames; and automatic desk backup.

Upgrades are $29. The company also will let registered owners directly buy up to 32 extra copies for $39 and purchase a network license for ClipShare, a $295 program that permits sharing of Clipboard contents over AppleTalk, for $99.

Owners of three competing utilities — PictureBook, SmartScrap and PictureBase — can trade in their original master disks, along with $39 plus shipping and handling, for MultiClip 2.0.

Olduvai Corp. is located at 7520 Red Road, Suite A, South Miami, Fla. 33143; (305) 665-4665. □


# With the HP ScanJet Plus, you've

**The HP ScanJet Plus scanner provides 8-bit photographic-quality scanning.**

That means 256 shades of gray for the hottest-looking output from your Mac. And it's so easy, too. At the click of a mouse, you can get negative or mirror images, as well as scaling in 1% increments from 4-200%. All for $2,190,* about what you would expect to pay for a 4-bit scanner.

So if you want the richest, most detailed images from your Mac, you've got it made with Hewlett-Packard. Call **1-800-752-0900, Ext. 1005** for your authorized HP dealer.

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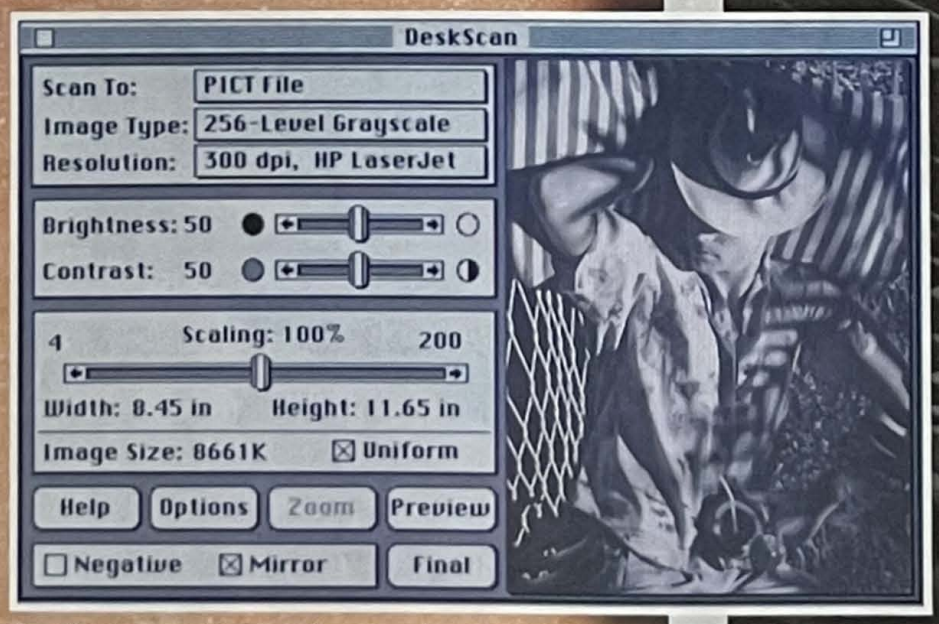



For all its amenities, ease of use, good image quality, and low price, *Publish!* recommends the HP ScanJet Plus as their "Best Buy."

# Module puts Strata images in motion

By Connie Guglielmo

St. George, Utah — Images created with StrataVISION3d can now be put in motion using a new animation module available from Strata Inc.

Called StrataFlight, the $189 module plugs into StrataVISION3d, Strata's $495 color 3-D modeling and rendering program.

To make animations, users create key frames, or the major transitional frames in a sequence, in StrataVISION3d. StrataFlight then automatically creates the in-between frames through a process called "tweening." Users can specify the number of frames to be generated between each key frame.

Frames can then be rendered in 24-bit color with light sources and shading in StrataVISION3d. The completed animation can be played back in StrataFlight at rates of up to 60 frames per second. Animations also can be saved as a series of PICT files in PICS format for export to animation programs such as MacroMind Director.

Strata Inc. is located at 249 E. Tabernacle, Suite 201, St. George, Utah 84770; (801) 628-5218. □

# GDT updates HP printer-driver package

By Henry Norr

Burnaby, British Columbia — GDT Softworks Inc. this week will begin shipping JetLink Express Version 1.1, an upgraded version of its Mac driver package for Hewlett-Packard and compatible printers.

The new version supports all features of Hewlett-Packard Co.'s LaserJet II laser-printer family as well as the DeskJet, DeskJet Plus and DeskWriter inkjet devices. It also includes a driver for the new LaserJet III, although that printer's built-in scalable fonts are not supported in Version 1.1, the company said.

The $149 package includes a serial cable, drivers, and bit-mapped and outline versions of Times, Helvetica, Courier and Symbol.

Highlights of the new release are drivers written specifically for the HP LaserJet IIP, LaserJet IID and DeskWriter. The IIP driver delivers a 25 percent increase in speed, GDT said. Both the IIP and IID drivers support the advanced paper-handling capabilities of those printers, including multiple trays and duplex printing on the IID.

The DeskWriter driver lets owners of the popular Mac inkjet printer make it accessible over a network via the NetSerial from Shiva Corp. of Cambridge, Mass., and spool documents with SuperLaserSpool Version 2.01 or higher, from SuperMac Technology Inc. of Sunnyvale, Calif.

Other enhancements include additional support for internal and cartridge fonts and enhanced character spacing for applications that do not support fractional character widths.

The Rev. Canon Curtis R. Zimmerman, rector of Christ Church (Episcopal) in Puyallup, Wash., and a beta tester of JetLink Express 1.1, said the new driver "vastly expands the control I have over my printing, compared to the HP driver" for his DeskWriter. The new JetLink "more than stands up to its claim of producing better gray scales," he added.

The upgrade is free to customers who bought JetLink Express after Jan. 4. For others, the price is $30.

GDT Softworks Inc.'s U.S. mailing address is P.O. Box 1865, Point Roberts, Wash. 98281. Its main office is located at Suite 188-4664, Lougheed Highway, Burnaby, British Columbia, Canada V5C 6B7; (604) 291-9121. □

## Driver for Xerox 4045 also available

GDT Softworks recently released a custom driver for the Xerox 4045 office printer. The QuickDraw-based driver includes four URW outline-font families (Times, Helvetica, Courier and Symbol). It also supports the printer's internal Titan (Courier) font and several add-on font cartridges. It is compatible with Adobe Type Manager for use with Type 1 PostScript fonts.

Four graphics resolutions are available, ranging from 75 by 75 dpi to 300 by 300 dpi. Among other features, the GDT software supports reduction, enlargement, font substitution, precision bit-map alignment, and portrait and landscape modes.

The $249 package includes a custom serial cable for the 4045, a heavy-use printer marketed primarily in IBM PC environments.

# LocalTalk interfaces for HP LaserJet

By Henry Norr

Boise, Idaho — Extended Systems Inc. this month released a pair of LocalTalk interfaces for Hewlett-Packard Co.'s LaserJet printers.

Positioned as OEM products for vendors offering software interpreters and specialized imaging applications, the ESI-2661A works with HP's LaserJet IIP, while the ESI-2662A supports the new LaserJet III, the IID and older Series II printers. The boards, priced at $395 each for OEMs, are fully compatible with Apple's Printer Access Protocol and emulate the LaserWriter, so they can be used with standard Apple LaserWriter and Laser Prep software. They also work with PostScript cartridges from HP and third parties.

While HP itself will soon release a $275 AppleTalk interface for the LaserJet, its implementation will also require HP's $695 PostScript cartridge, as well as additional memory, and will not work with older Series II LaserJets. In addition, Extended said, its system will offer better performance when used with fast Macs.

Extended Systems Inc. is at 6062 Morris Hill Lane, Boise, Idaho 83704; (208) 322-7163. □

got it made in the shades.

*Suggested U.S. list price. © 1990 Hewlett-Packard Company PEL2004

# SpeedPlanner dummies, tracks production

## *DTI's PageSpeed, AdSpeed updated*

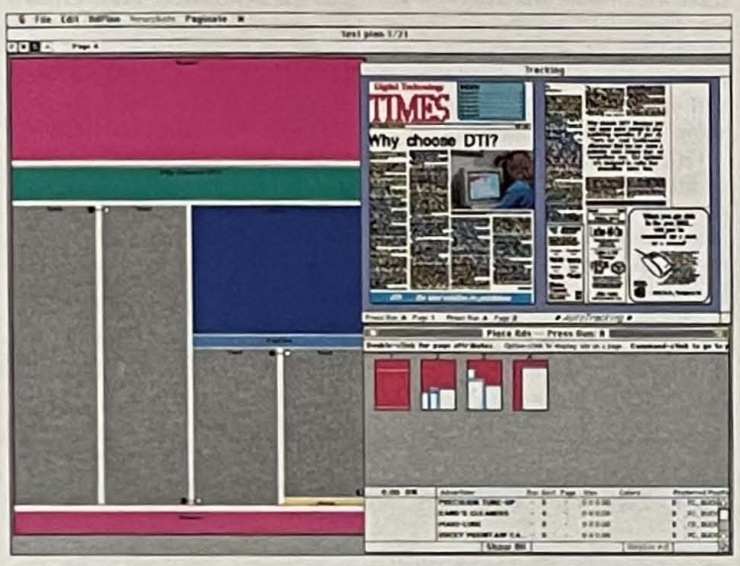
**By Carolyn Said**

Boston — Digital Technology International is trying to fill a major gap in the Mac's publishing software lineup: dummying and editorial management.

At the Seybold Seminars '90 here this month, DTI showed SpeedPlanner, a prepublication planning and production-tracking system to ship next month. The company also announced that updates to its AdSpeed and PageSpeed layout programs will be available next month.

SpeedPlanner, priced from $4,995 to about $15,000 depending on configuration, includes AdPlanner, an ad-dummying system that is available separately for $895.

A SpeedPlanner user first reserves space for display ads, then plans editorial layout. Using stored style sheets, the user can specify all parameters for a story. Once a page is dummied, the user saves an electronic template that can be simultaneously accessed by users of PageSpeed, QuarkXPress, Aldus PageMaker, and Letraset's DesignStudio or Ready,Set,Go! The program will integrate page elements entered by different users.




**DTI's SpeedPlanner lets users dummy pages (left), creating electronic templates that can be accessed from page-layout programs to fine-tune the finished page (top right). SpeedPlanner also can automatically locate stories and ads and pull them onto the appropriate pages. With SpeedPlanner's AdPlanner module, users assign space to display ads for a publication (bottom right).**

SpeedPlanner can automatically locate ads and stories on the network and pull them onto the appropriate page. It tracks the progress of each page and shows its current status.

At the high end, SpeedPlanner will include an Oracle database engine that organizes editorial copy through a desk metaphor. For example, stories can be placed in the In Basket, Out Basket or Desk of such editorial desks as National News, Copy Editor or Final Proof.

"Overall, it's a really hot program," said Dennis Stanford, production manager of the Neighbors News, a 10-edition weekly based in Sacramento, Calif. "There's nothing else like it on the market."

Stanford has been beta testing SpeedPlanner in preparation for using it for full-scale production. Noting that the program will require editors to be more organized, he said he expects it to save time and reduce errors.

Versions 2.0 of PageSpeed and AdSpeed will gain automatic copy fitting, color blends, automatic ink trapping, better text handling and programmable Fkeys. An improved interface adds a floating toolbox that toggles to display a palette of functions and item attributes.

PageSpeed 2.0 also will include features such as keyboard commands to speed up page layout.

AdSpeed 2.0 and PageSpeed 2.0 will remain priced at $4,995 each for black and white and $5,995 for color. Current users can upgrade for $100.

Digital Technology International is located at 500 West 1200 South, Orem, Utah 84058; (801) 226-2984. □

# Catch the Wave4 from QuarkXPress

**By Carolyn Said**

Boston — Bestinfo Inc. offers QuarkXPress users a link between the Macintosh page-layout program and Bestinfo's IBM PC-based Wave4 publishing system.

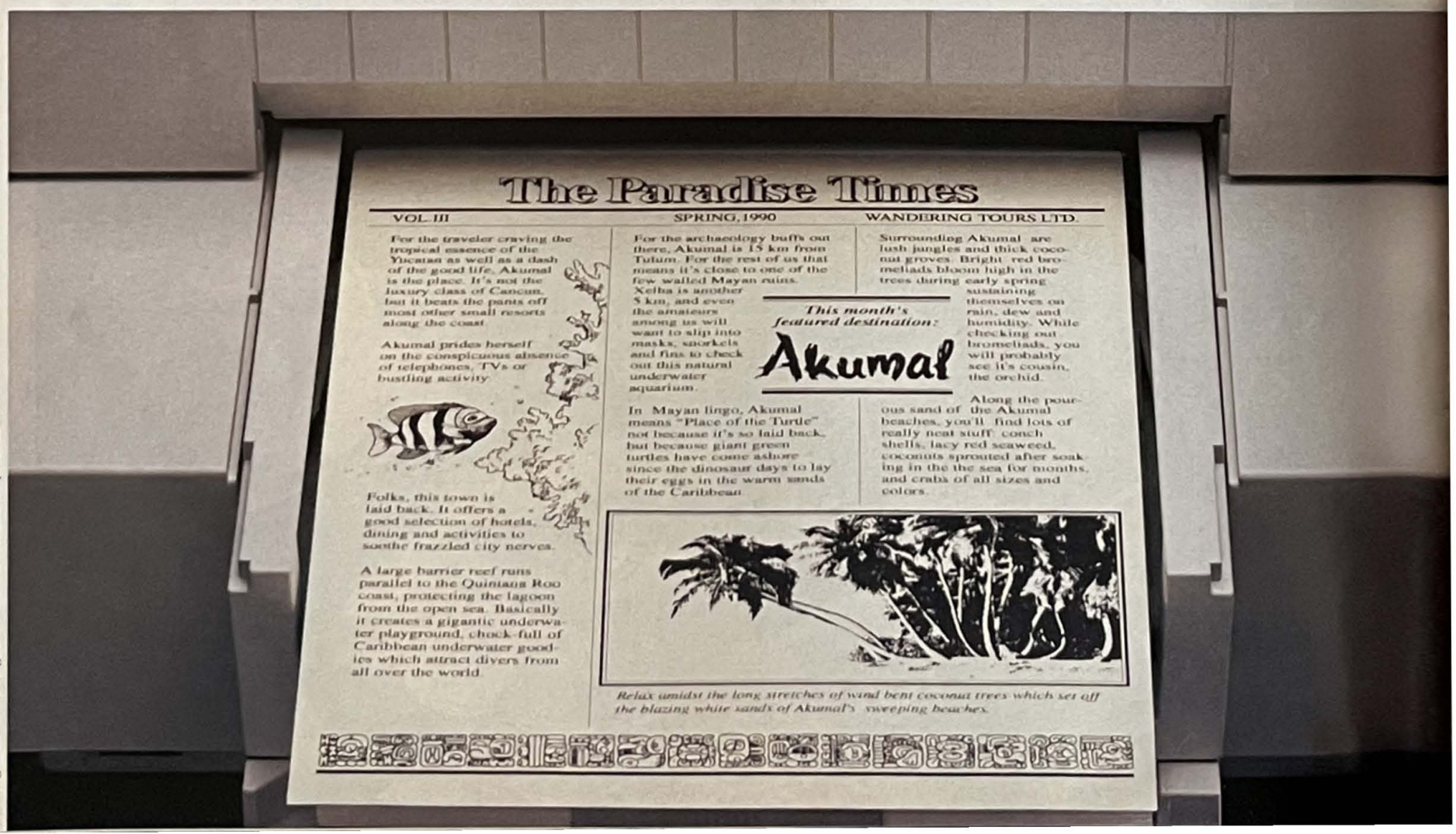
The company showed its QX-Link, a $5,000 QuarkXTension, at the Seybold Seminars '90 here this month.

The new link, set to ship next week, lets XPress users send text and page geometry to PageWright, Wave4's pagination and design module. With QX-Link, which can be put on a network, Mac users also can access Encapsulated PostScript, Targa and TIFF files from the Wave4 system.

Like similar products from Atex Magazine Publishing Systems of Bedford, Mass., and Compatible Systems Engineering Inc. of Annandale, Va. (see MacWEEK, Nov. 7, 1989), QX-Link is targeted at art directors who prefer the Mac interface for graphic design but whose companies rely on PC-based systems for production.

Bestinfo Inc. is located at 1400 N. Providence Road, Media, Pa. 19063; (215) 891-6500. □


# With the HP DeskWriter, you can have it


The Paradise Times
VOL. III
SPRING, 1990
WANDERING TOURS LTD.
For the traveler craving the tropical essence of the Yucatan as well as a dash of the good life, Akumal is the place. It's not the luxury class of Cancun, but it beats the pants off most other small resorts along the coast.
Akumal prides herself on the conspicuous absence of telephones, TVs or bustling activity.
Folks, this town is laid back. It offers a good selection of hotels, dining and activities to soothe frazzled city nerves.
A large barrier reef runs parallel to the Quintana Roo coast, protecting the lagoon from the open sea. Basically it creates a gigantic underwater playground, chock-full of Caribbean underwater goodies which attract divers from all over the world.
For the archaeology buffs out there, Akumal is 15 km from Tulum. For the rest of us that means it's close to one of the few walled Mayan ruins. Xelha is another 5 km, and even the amateurs among us will want to slip into masks, snorkels and fins to check out this natural underwater aquarium.
This month's featured destination:
Akumal
In Mayan lingo, Akumal means "Place of the Turtle" not because it's so laid back, but because giant green turtles have come ashore since the dinosaur days to lay their eggs in the warm sands of the Caribbean.
Surrounding Akumal are lush jungles and thick coconut groves. Bright red bromeliads bloom high in the trees during early spring sustaining themselves on rain, dew and humidity. While checking out bromeliads, you will probably see it's cousin, the orchid.
Along the pourous sand of the Akumal beaches, you'll find lots of really neat stuff: conch shells, lacy red seaweed, coconuts sprouted after soaking in the the sea for months, and crabs of all sizes and colors.
Relax amidst the long stretches of wind bent coconut trees which set off the blazing white sands of Akumal's sweeping beaches.

*Suggested U.S. list price. © 1990 Hewlett-Packard Company. PE12005
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# Drive vendor aims low in price war

## *PC disk supplier moves in on Mac*

**By Henry Norr**

Tempe, Ariz. — Declaring "The war is on!" Hard Drives International this month announced cuts in what was already an aggressively priced line of internal and external drives.

HDI, which has seen its annual sales in the IBM PC and compatible world soar to almost $50 million in just four years, first laid claim to the title of "low-price leader" in the Macintosh storage market last fall with the introduction of its POWERDrive series. The line features some of the lowest storage prices ever advertised for the Macintosh, including a 20-Mbyte internal Seagate drive now priced at $269 and a 44-Mbyte SyQuest removable-cartridge drive for $649.

Winner of several awards for services from PC-oriented publications, HDI provides a 30-day guarantee, a one-year replacement policy, toll-free sales and support lines, and a promise that turnaround time on returns will not exceed 48 hours.

**HDI hard drive prices**

| Capacity in Mbytes | Manufacturer | Access time in microseconds | External price | Internal price |
|---|---|---|---|---|
| 20 | Seagate | 40 | $319 | $269 |
| 30 | Seagate | 40 | $349 | $299 |
| 40-45 | Seagate | 40 | $399 | $329 |
| | Conner | 28 | $429 | $349 |
| | Quantum | 19 | $459 | $379 |
| 60 | Seagate | 28 | $449 | $429 |
| 80 | Seagate | 28 | $499 | $479 |
| | Quantum | 19 | $649 | $599 |
| 105 | Conner | 23 | $629 | $549 |
| | Quantum | 19 | $699 | $649 |
| 200 | Conner | 16 | $1,094 | $996 |
| 320 | Micropolis (full height) | 16 | $1,699 | NA |
| 600 | Micropolis (full height) | 16 | $2,499 | NA |

The standard external and internal drives ship with Disk Manager, Mac utility software from On-track Computer Systems Inc. of Eden Prairie, Minn. Features include software selection of SCSI ID; automatic and manual head parking; a full display of drive and format parameters; and hard partitioning (A/UX compatible) with password protection, a desk-accessory mounter and an automounting option.

For its SyQuest-based removable drive, however, an HDI spokeswoman said that "Because of the complexity of removable media, we have found it necessary to evaluate several software packages," and that it has not yet made a final selection.

Hard Drives International is located at 1912 W. Fourth St., Tempe, Ariz. 85281; (602) 967-5128; (800) 234-3475. □

# Engineering developers roll out high-end systems based on LabVIEW

**By Rochelle Garner**

Austin, Texas — National Instruments Corp. is trying to prove to the technical and scientific communities that its LabVIEW 2.0 graphical instrument-control software, combined with the Mac II, can be a productive colleague.

It joined with two companies last week in introducing high-end instrumentation systems, each incorporating LabVIEW as the controlling software.

▶ North Carolina SRT Inc.'s new Low Pressure Liquid Chromatography (LPLC) system, intended for large-scale pharmaceutical production, separates a single component from a mixture of substances.

Priced at $200,000, the system includes a Mac II; a 19-inch color monitor from RasterOps Corp.; an ImageWriter II; and LPLC components such as sensors, piping pumps and a programmable logic controller.

Substances can be separated by affinity chromatography or by gradient processes, according to the company. System sensors can monitor pH, conductivity and ultraviolet spectra during the separation process. Separated products can be sent to holding tanks for later processing.

▶ Columbia Scientific Industries Corp. unveiled its Quantitative Reaction Calorimeter (QRC) for laboratory thermal analysis of chemical reactions. The $85,950 QRC — intended for research, process development, hazard evaluation and small-scale batch production — is designed to compensate immediately for temperature changes stemming from reagent reaction. LabVIEW allows scientists or technicians to control all operations and modes without having to touch the instrumentation.

The system includes a calorimeter with stirrer, probes, a reagent delivery system, and a refrigeration and heating unit.

North Carolina SRT Inc. is at 1018 Crosstimbers Parkway, Morrisville, N.C. 27560; (919) 469-5848. Columbia Scientific Industries Corp. can be reached at P.O. Box 203190, Austin, Texas 78720; (512) 258-5191. National Instruments Corp. is at 6504 Bridge Point Parkway, Austin, Texas 78730; (512) 338-9119. □

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HEWLETT PACKARD

# Plus users get big display option

By John Battelle

Camarillo, Calif. — MegaGraphics Inc. earlier this month began shipping a new display system targeted at what the company called the "forgotten 1.5 million Mac Plus users in the world."

The MegaScreen Plus Rival Display System consists of a 19-inch monitor and two boards, one smaller 68000 processor board that clips onto the Plus' motherboard and a 3-by-5-inch card that installs in the back of the computer and attaches to the MegaScreen Rival monitor.

The boards work together to provide a 75-Hz refresh rate on a 1,024-by-826-pixel display at 75 dpi. The extra 68000 processor ensures that there will be no noticeable performance degradation, according to MegaGraphics. The company recommends that the boards be installed by a dealer.

The Plus system has a tilt-and-swivel base, dual-screen support, a zoom feature and a one-year warranty.

It is shipping now for $1,748, but those who purchase the system before June will get a coupon for a $150 refund, the company said.

MegaGraphics Inc. is at 439 Calle San Pablo, Camarillo, Calif. 93012; (805) 484-3799. □

# SE screen filter tops new Kensington list

By Henry Norr

New York — A new anti-glare, anti-radiation screen tailored to fit the Mac SE and SE/30 tops a list of several new offerings from Kensington Microware Ltd., the long-time leader in the Mac accessories field.

Kensington's platinum-colored Maccessories SE Anti-Glare Filter, priced at $79.95, fits snugly over the SE's built-in monitor. Made of optical-quality glass with scratch-resistant ceramic anti-reflection coating, the filter reduces glare up to 96 percent, according to the company.

The new filter also blocks electromagnetic radiation (VLF and ELF emissions), which some believe could be a long-term danger to the health of computer users.

In addition, the filter has conductive coating and a grounding wire to draw off static electricity.

Kensington also continues to market its original Maccessories Anti-Glare Filter at $49.95 in either a beige or platinum color. Made of plastic, not glass, and attached to the Mac by Velcro, it lacks the anti-radiation and anti-static capabilities of the new SE filter.

Other new products in Kensington's Mac lineup include:

▶ A LaserWriter II Security Kit, a $49.95 package that includes hasps that attach to the Apple printers, a padlock and an 8-foot cable to be "wrapped around a desk leg or other immovable object," according to the company.

▶ Monitor stands for both six-slot and three-slot Mac II-family machines. The steel stands, designed to hold displays that weigh up to 100 pounds, have rubber feet and ventilation slots in the top. The model for six-slot machines is priced at $99.95, while the unit for the Mac IIcx and IIci is $75.95.

▶ Two products that can be attached to a monitor to keep hard copy in easy view. The $29.95 Universal Copy Stand, which provides backing, a copy clip and line follower, can even hold a small manual, the company said. The SideClip, priced at $6.95, hangs from the corner of a monitor and is designed for lighter duty.

▶ A redesigned Maccessories Tilt/Swivel base for compact Macs. The new 2-inch-high base, priced at $34.95, allows easier movement and includes indentations for the computer's feet.

Kensington Microware Ltd. is located at 251 Park Ave. S., New York, N.Y. 10010; (212) 475-5200; (800) 535-4242. □


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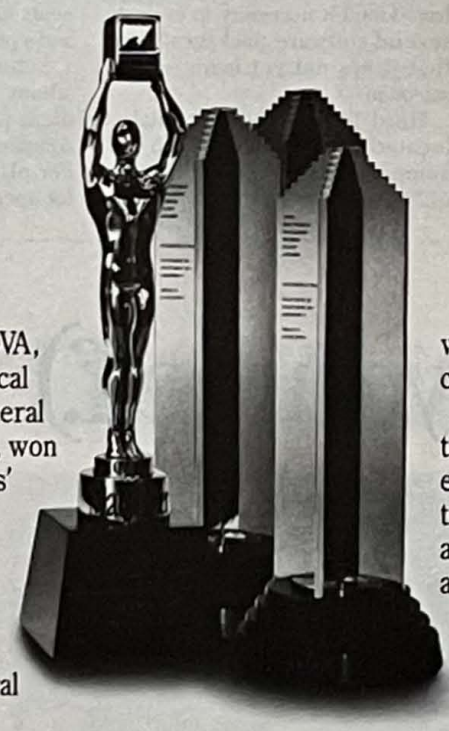

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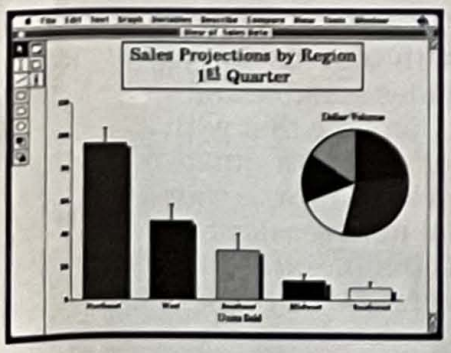


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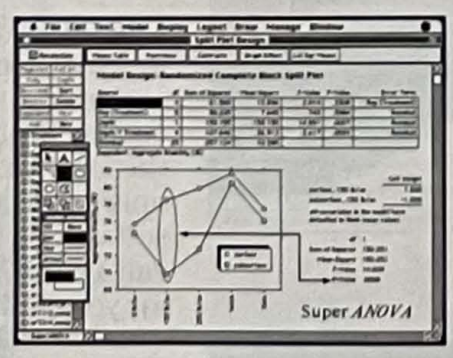


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StatView and SuperANOVA run on the Macintosh II family, SE/30, SE, Plus and Portable. © 1990 Abacus Concepts, Inc. All brand and product names are trademarks or registered trademarks of their respective holders.


# CalComp adds 2-page display

Anaheim, Calif. — Targeting the graphic-design market, CalComp Inc. has released three two-page display systems for the Mac II line.

Each member of the DrawingCard family sports a 21-inch monitor, 1,152-by-870-pixel resolution at 72 dpi, a 75-Hz refresh rate, a video interface card, cable and a one-year warranty.

Priced at $3,195, CalComp's GrayVision system supports 256 shades of gray. The new eight-bit color ChromaVision, which costs $6,395, can display 256 colors; ChromaVision Plus, at $8,595, supports 24-bit color for 16.7 million colors. ChromaVision Plus comes with a 32-bit QuickDraw disk and 3 Mbytes of video memory; the other two systems include 1 Mbyte of RAM.

CalComp Inc. is at 2411 W. La Palma Ave., Anaheim, Calif. 92801; (714) 821-2000. □

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**New Media** STEVE ROSENTHAL

# The legal sound of multimedia

Turn off the sound, and most people ignore what's on television. But most people will follow a show they can hear from another room, even if they can't see the picture.

I think there's a lesson here. All the experienced developers of linear and interactive media I've spoken with agree that sound is more important in multimedia than most newcomers realize. In many presentations, said producer Robert May of San Francisco-based Destinations/Interactive Media, "80 percent of the impact comes from music and sound effects."

However, sound for multimedia is not just the audio equivalent of on-screen images. While there are certainly similarities — there's even an audio analogy to the look-and-feel controversy, addressed in a recent court ruling against a company that used a Bette Midler sound-alike singer in a commercial — there are important differences.

**Rights.** Securing the rights to sound for use in a multimedia project "is basically the same as doing it for a film," said Roberta Cairney, a partner at the law firm of Cooper, White & Cooper in San Francisco. "You need sync (synchronized-performance) rights. And if you're using someone else's sound recording, you need rights in the sound recording if it's different from the sync rights themselves."

Of course, you can simply take a chance and ignore the ownership question; much early multimedia on the Mac used unauthorized audio elements, and most on-line services and users groups have scores of sound clips recorded without legal permission.

But like pirating software or copying images, it's wrong. If you're caught, legal fees and penalties can be very expensive.

**Sound sources.** So instead, here are four ways to get music and sounds legally.

One of the easiest is to license sound from a music library "by the needle drop." A music library is a company that specializes in providing audio to film and video producers. "By the needle drop" means you pay only for each cut or sound you use.

At most such houses, said Nancy Berke of Robert Berke Music in San Francisco, you pay an hourly rate (it's $75 at Berke) for a technician who sits with you and searches the library for music or sounds that meet your requirements. Once you've made your selections, you pay a license fee of about $100 to $500 for the use of each selection or perhaps a few thousand dollars as a blanket rate for a complete set of selections.

Instead of paying per sound and use, you also can purchase what is called "buy-out music." That's a collection of music or effects clips that you buy and then can use on as many projects as you like. But you may have to buy the music in groups or sets, and you can't always listen to each cut before you select it. Typical prices, said Mike Fuller, owner and marketing director of Los Angeles-based Creative Support Services, range from $80 to $150 or more per hour-long CD.

If you want to use a popular recent song or a notable performance, chances are it won't be available in either needle-drop or buy-out libraries. Getting permission to use such a clip may mean buying rights from everyone involved, from the original composer to the sheet-music publisher to the recording company that distributes the records or tapes.

If you've got a burning need — and an equally outstanding budget — for this type of music, you'd probably want to call up a rights and permissions company. Some songs just are not available to anyone at any price, but when rights are available, said agent Barbara Zimmerman of BZ Rights & Permissions of New York, it takes only a few days to a few weeks, and a few hundred dollars to about $10,000, to secure them for commercial, non-broadcast uses.

Lastly, you can have music or effects specially composed for your project. Rates vary widely, but figure on a few hundred dollars to $1,000 per minute, plus the cost of performance and recording. □

*Send tips and comments to Steve Rosenthal, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; AppleLink: Steve.R; MCI: 114-8611.*

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Illustration by Bert Monroy.

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# Coming April 10: New MacWEEK 200

Millions more Macs have hit the desks of corporate and organizational professionals since 1988. Which sites still rate among the largest? Look for the 1990 MacWEEK 200 April 10 to find out how the Macintosh's hold on the Fortune 500, government and the academic elite shapes up unit by unit.

Only MacWEEK, the newspaper edited specifically for Macintosh Volume Buyers, tracks the trends and talks to the leaders where they work. The MacWEEK 200 is a special report you won't want to miss.

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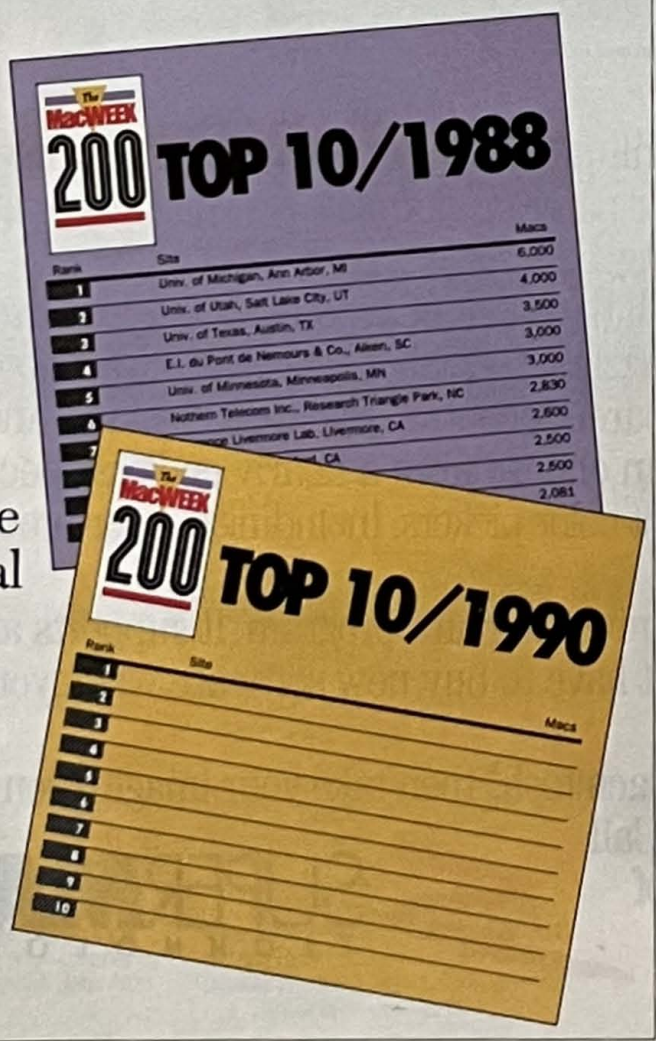



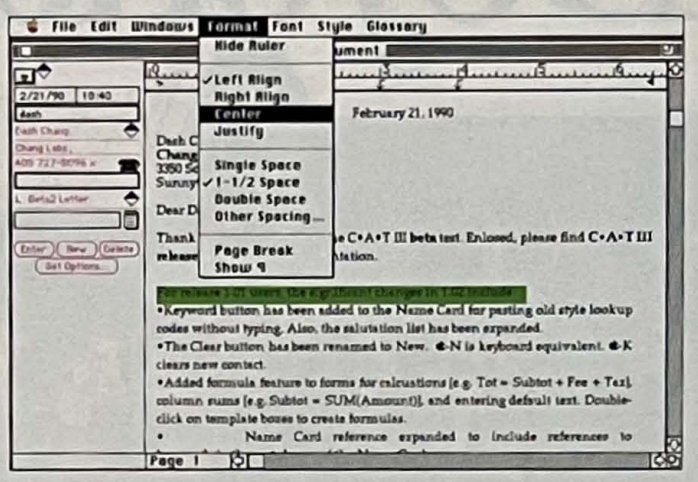


**A built-in word processor and templates as well as a drawing module, a simplified interface and new commands for merging data files are highlights of the forthcoming Version III of C•A•T, Chang Laboratories' relational database for tracking contacts, activities and time.**

## C•A•T III almost out of the bag

**By Henry Norr**

Santa Clara, Calif. — A new C•A•T will soon be prowling the desktops of sales professionals and managers, and beta testers say this one really purrs.

Chang Laboratories Inc.'s C•A•T III, the latest version of a relational database designed specifically to track business contacts, activities and time, is due out "sometime in the second quarter," according to company President Dash Chang.

"It's the best tool I've come across for keeping track of people," said Richard Lim, a project manager at Lotus Development Corp. of Cambridge, Mass. Lim said he had tried HyperCard, Lotus' own Agenda software for the IBM PC and "pieces of paper" before coming across C•A•T III. "The great thing about it is that it's all set up and optimized for tracking contacts," he said. "All the other programs make you do a lot of setup."

Key enhancements in Version III include built-in word processing and drawing functions and templates that allow users to generate all standard business correspondence from within C•A•T. Both new modules, Chang said, match the features and emulate the interface of popular stand-alone applications in those categories.

Several other changes have been designed to make the program "less intimidating," according to the company. Four windows have been consolidated into one, and mail-merge and other printing routines have been simplified. New conveniences include default entries, a glossary function and custom menus.

Gordon Magee, national sales manager at CEM Corp., a manufacturer of analytical instruments in Mathews, N.C., said most of his 16 field sales representatives are using C•A•T. Many of them manage up to 300 active leads and twice as many older contacts. "If I told them they couldn't have that program, they'd kill me," he said.

Taking advantage of C•A•T III's new Save Changes and Merge commands, CEM is hoping to set up a system under which in-house staffers will qualify leads and then pass the data to field representatives, Magee said. The new commands let one user incorporate C•A•T data from another without overwriting or duplicating previous entries.

C•A•T III is tentatively priced at $495. The previous version, 2.0.4, is now available directly from the publisher for $80, with a promise of a "major discount" on the new release.

Chang Laboratories Inc. is located at 3350 Scott Blvd., Suite 25, Santa Clara, Calif. 95954; (408) 727-8096. □

## Sharp to ship LCD panel with 'twiple supertwist'

**By Carolyn Said**

Mahwah, N.J. — Sharp Electronics Corp., which manufactures many of the LCDs used in presentation products, plans to ship its own high-resolution black-and-white LCD projection panel in May.

The $1,795 QA-75 uses Sharp's proprietary "twiple supertwist" liquid-crystal composition to achieve a 17-1 contrast ratio and a resolution of up to 640 by 480 pixels in 16 true shades of gray, the company said.

The QA-75 offers such special capabilities as screen freeze, screen enlargement, screen move and a background-reverse function. A solid-state EEPROM stores all setup adjustments, Sharp said.

Sharp also offers two low-resolution panels, the LCD QA-25 and the QA-50.

Sharp Electronics Corp. is located at Sharp Plaza, Mahwah, N.J. 07430-2135; (201) 529-8731. □

## E-Machines cuts prices on display line

**By John Battelle**

Beaverton, Ore. — In an attempt to beef up its presence in an already crowded video market, E-Machines Inc. earlier this month reduced prices on its entire line of color and monochrome display offerings.

Effective March 1, E-Machines cut the price of its Big Picture 17-inch display system for the Mac Plus, SE and II by $145, to $1,650.

Its QuickView Z21 21-inch system was reduced $200, to $2,390 for the SE and to $2,490 for the SE/30 or Mac II.

E-Machines' ColorPage T16 16-inch color system has been reduced $700, to $3,595, while the price of the 19-inch T19 color system was cut by $200, to $5,995.

In addition to the price cuts, E-Machines is launching a channel-marketing program.

According to Michael Loftus, vice president of marketing, E-Machines plans to concentrate on its unique screen sizes and standard 72-dpi resolutions as it competes with giants such as Radius Inc. of San Jose, Calif., and SuperMac Technology of Sunnyvale, Calif.

E-Machines is at 9305 S.W. Gemini Drive, Beaverton, Ore. 97005; (503) 646-6699. □

# XCMD compiler goes beyond basics

By Raines Cohen

Tampa, Fla. — Teknosys Inc.'s HyperBASIC, a BASIC compiler designed specifically to make it easier to develop external commands for HyperCard stacks, will get its first major upgrade next month.

The $99 program, which provides an editor, linker and attachment tools with the compiler, lets developers create externals using a simple set of extensions to the popular BASIC language. In addition, Teknosys adds a number of programming structures, direct support for HyperCard functions such as setting field values, calls for Mac Toolbox access and advanced debugging features.

Even professional programmers say they sometimes take advantage of HyperBASIC's quick and dirty approach. "For those times when Pascal and C are too complicated, HyperBASIC is a quick alternative for generating externals," said Leonard Rosenthol, software engineer at Software Ventures Corp. of Berkeley, Calif., publisher of MicroPhone II.

HyperBASIC Version 1.1, due next month, adds support for strings larger than 32 Kbytes; an expanded range of Toolbox calls, including Color QuickDraw; and improved support for Silicon Beach Software Inc.'s SuperCard. Brian Oestreich, product manager at Teknosys, said the new version works "especially well" with the forthcoming Version 1.5 of SuperCard.

HyperBASIC can create externals for HyperCard, SuperCard and a variety of other programs compatible with standard HyperCard externals, including MicroPhone II Version 3.0, AuthorWare Professional, FoxBASE+/Mac, Plus, 4th Dimension, Mahogany and others due soon, Teknosys said.

Teknosys said it is also working on a relational database, scheduled for release later this year. The as-yet-unannounced package, which will run as a set of HyperCard externals, will be a superset of HyperBASIC.

Registered owners of HyperBASIC 1.05 can upgrade for a shipping and handling fee tentatively set at $5.

Teknosys Inc. is located at 3923 Coconut Palm Drive, Suite 111, Tampa, Fla. 33619; (813) 620-3494; (800) 873-3494. □

# Modules link ArchiCAD to MicroStation Mac

South San Francisco, Calif. — Graphisoft is now offering its MA-Link module, which allows users to convert files created in Intergraph Corp.'s MicroStation Mac into ArchiCAD, Graphisoft's $3,950 architecture-specific CAD program. The module is free to registered users of both programs.

Graphisoft also is at work on another module that will convert files from ArchiCAD to MicroStation Mac, the $3,300 high-end CAD program from Huntsville, Ala.-based Intergraph. Availability and price of the second module have not been determined.

Together, the two modules will give ArchiCAD users access to a sophisticated 3-D application and provide MicroStation Mac users with tools intended specifically for architects, Graphisoft said.

Graphisoft is located at 400 Oyster Point Blvd., Suite 517A, South San Francisco, Calif. 94080; (415) 266-8720; (800) 344-3468. □

# Minitel's American cousin comes to Texas

By Carolyn Said

Houston — Macintosh users in the Lone Star State as well as those who don't mind long-distance charges can log onto U.S. Videotel Inc., an American cousin of France's popular Minitel videotex service.

Offering services such as banking, travel, electronic games, shopping and daily news services, U.S. Videotel distinguishes itself from similar services such as Prodigy by providing a strong local focus, particularly for "transaction services" such as banks, retail stores and restaurants, a spokesman said.

Although about 80 percent of the service's 25,000 users log on with dedicated compact terminals that connect directly to telephones, U.S. Videotel offers a Macintosh emulation-software package for $19.95. Users pay a flat $9.95 rate per month for unlimited access.

The service is available in Dallas, Fort Worth, Houston and environs, and U.S. Videotel plans to expand to additional major metropolitan areas this year. The company also intends to provide service in Toronto and Montreal.

U.S. Videotel Inc. is located at 5555 San Felipe, Suite 1200, Houston, Texas 77056; (713) 840-9777. □


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# Filling the bill for contractors

By Rochelle Garner

Valencia, Calif. — Contractors looking for one application to manage their entire office may find that The Contractor Solution! from Vertical Solutions Inc. fits the bid, the bill and most functions in between.

The $3,995 package handles such tasks as job estimates, job costing, accounts payable and receivable, general ledger, and inventory. It contains word processing features for producing letters and business forms from within the program.

The Contractor Solution! can track vehicles and equipment, including usage cost, condition and depreciation. The program also has a subcontractor management feature that, for example, generates custom contracts and schedules and reports on subcontractor insurance and liens. Billing can be set up in either standard format or AIA (American Institute of Architects) format.

In addition, the program will compare job costs to budgeted costs or bids; payable invoices are compared to purchase orders and subcontracts. It will warn of overpayment to vendors.

Using The Contractor Solution! in multiuser mode requires additional software priced at $800 for three nodes plus $200 for each additional user. Up to 10 users can be connected to a network.

Vertical's The Subcontractor Solution!, which does not offer AIA billing format or subcontractor management capabilities, is priced at $2,995.

Both packages come with five hours of telephone support.

Vertical Solutions Inc. is located at 25050 Avenue Kearny, Suite 201, Valencia, Calif. 91355; (805) 257-6911. □


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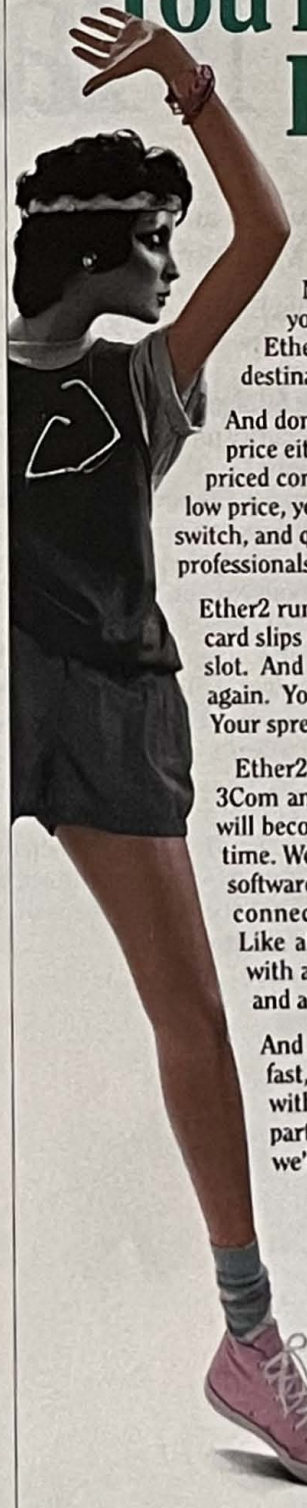

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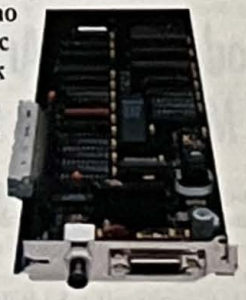

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# Dycam premiers still-video camera

By Carolyn Said

Chatsworth, Calif. — In an effort to give desktop publishers easy access to digital photographs, Dycam Inc. is planning a still-image camera that transmits gray-scale photographs directly to the Mac or IBM PC via a cable.

The Dycam 1GS Digital Still Camera, to ship in the third quarter for $895, will include a pocket-size camera, cable connections, and software for displaying and printing the images as well as converting them to TIFF or PICT files and halftone or dither formats.

Images will display in 256 gray levels at a 376-by-240-pixel resolution.

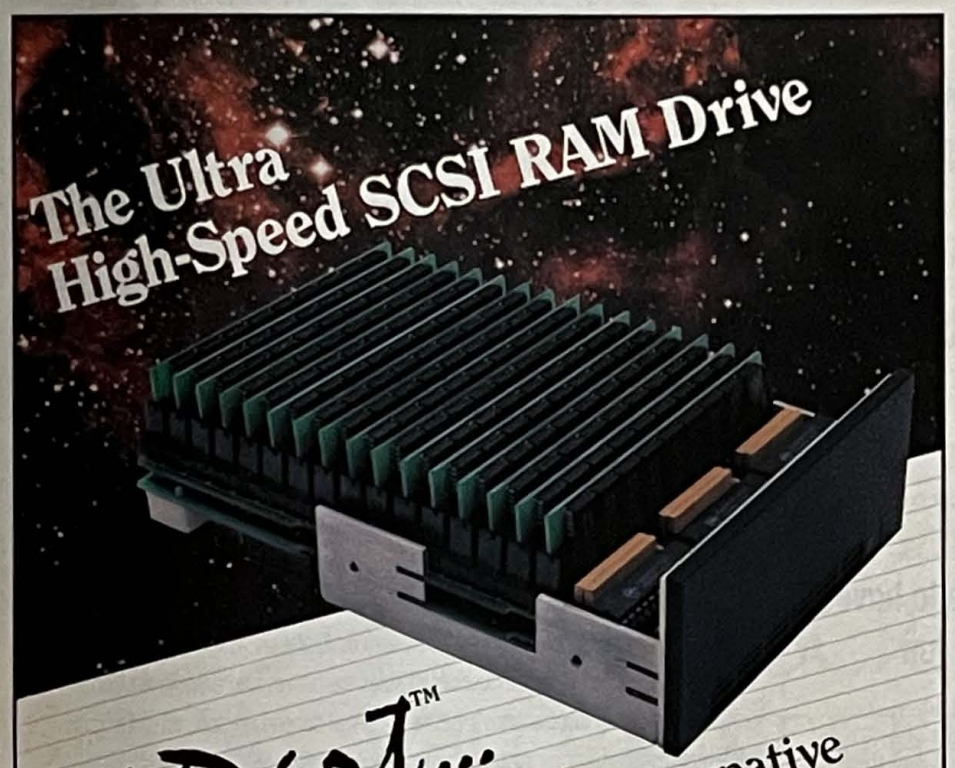
The company hopes the product, as the only available direct-digital camera, will lure users who don't want to spring for a scanner or the digitizer and other equipment required for most video cameras. "We're dropping the cost of going 'click' by a factor of 100," said Jon Barrett, Dycam president.

However, Barrett said, the Dycam camera is most appropriate for "a guy who doesn't consider himself a photographer." The battery-operated, 8-ounce camera has a fixed-focus lens, fixed aperture, and automatic exposure control with flash or ambient light.

The camera can store 16 "publication-quality" or 32 "documentation-quality" images. It has no removable media, so photographs must be transmitted to the Mac for storage.

The company plans to sell an assortment of optional accessories, including a still-life color kit containing filters for shooting in red, green and blue; a battery pack with an eight-day life for field use; a wide-angle adapter; and an attachment that lets users scan color slides into the camera using color filters.

Dycam is at 9546 Topanga Canyon Blvd., Chatsworth, Calif. 91311; (818) 998-8008. □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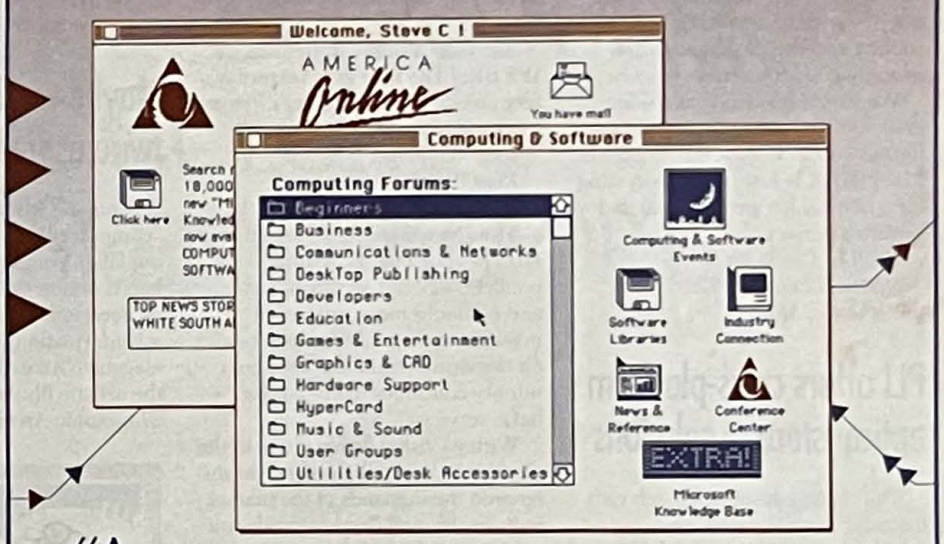


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## Letters

### MacWEEK wins out over cultist forums, monthlies

GORDON STUDER

Just a note of appreciation for your publication. Our group at the National Learning Laboratory finds it to be the most useful source of computer information.

None of us here likes to fool with modems, information services or those cultist forums and bulletin boards. We appreciate your weekly coverage — the monthlies are too slow — and the quality of your writing and the design are astonishingly good for a trade weekly.

We use MacWEEK as a reference for our buying decisions and for our recommendations to clients. MacWEEK is just plain interesting for a non-hacker professional and business person.

*Cecil N. Clark, Ph.D.*
*National Learning Laboratory*
*Bethesda, Md.*

### PLI offers cross-platform optical-storage solutions

The "Magneto-optics reach critical mass" article regarding read/write magneto-optical disc drives (MacWEEK, Jan. 16) was the first such article to treat optical technology as a legitimate data-storage alternative in the the Mac market, rather than a novelty item.

PLI offers optical solutions for several environments, most of which were not mentioned. PLI's Infinity Optical supports not only the Mac platform but also MS-DOS, and has done so since it first shipped. In fact, ours is the only subsystem that, using our DOS-Transfer utility, reads files from MS-DOS optical cartridges while the drive is hooked up to a Mac. In addition, we support A/UX, Novell, Sun and a wide variety of other Unix-based systems. We also have alternate formatting software that allows the formatting and use of 512- and 1,024-byte-per-sector cartridges interchangeably. All of these solutions are available on request.

Also, while it is true that the drives are not fast enough for real-time recording, the read-access time on our drives is quite fast enough for real-time playback of sound or multimedia presentations. With regard to termination, although it was not available to MacWEEK in time to review, PLI has been shipping drives with external termination switches for approximately three months.

*Fred Swan*
*product marketing manager*
*Peripheral Land Inc.*
*Fremont, Calif.*

### Apple misses the mark with its new machines

Your Feb. 20 News Analysis, "Apple tunes in to clamor for econo Macs," clearly illustrates what has been neglected for the past several years. A new computer shopper will select an IBM PC clone based solely on price. Apple is rumored to have a low-end Macintosh in the works, based on the same dated 68000 technology. I think this Mac will be Apple's "peanut"; it will be crippled because it won't be able to run System 7.0, and most current software begs for the speed of the '030.

Apple should bite the bullet and make a low-end 68030-based machine.

A previous quote from MacWEEK, "The user gets yesterday's technology at today's prices," rings loud and clear.

*John Williams*
*Kent, Wash.*

The "New Mac ready to roll as IIfx" in your Feb. 27 issue announced a better, stronger, faster and no doubt more expensive machine that stands ready to take on the world, while the user community continues to cry out for basic services.

With its vision firmly glued to the pie in the sky, Apple has once again ignored the demands of the market in its continuing drive to produce a concept machine that no one needs and almost no one can afford. I have a suggestion. Why not name the next series the Mac II XS and just number them from there.

*Elisabeth M. Karl*
*Chicago*

### Digital color proofs can't replace film Matchprints

The Macintosh as a pre-press production platform has received even more hype than multimedia, and the assertion in The Cutting Edge (MacWEEK, Feb. 27) that the new generation of printers, exemplified by the Canon Color Laser Copier 500 and thermal-dye-sublimation transfer devices from Kodak, DuPont, Nikon and others, "may be the writing on the wall" for traditional color-separation overlay proofing systems is typical of that hype.

As long as film negatives are used to create plates for printing, it will be necessary to proof the actual film to burn the plates. A direct digital color proof simply cannot reveal errors in film processing or scratches on a negative.

These devices are useful in the pre-press production cycle for proofs everywhere but at the final film stage, and in this capacity they are more of a threat to color stats, INTs and Cibachrome than they are to Matchprint and Cromalin.

*Clay Gordon*
*director of marketing and product development*
*Besler Knowledge Services*
*New York*

### Lawyers are biggest obstacle at Apple

Kudos to David Ramsey for his Help Desk column about Apple's legal department (MacWEEK, Feb. 27). I often get the impression that the lawyers are the greatest single obstacle to getting things done at Apple. The last half of his column was one of the greatest classic flames and cut right to the heart of the current problems at Apple.

*John Norstad*
*Northwestern University*
*Evanston, Ill.*

### Maybe we like to have twice as much fun

I guess it is inevitable that the "computer for the rest of us," having fallen comfortably into the hands of non-technical users, will, on occasion, be used to present misinformation with great style and elegance. An excellent example is the artistic illustration in the Feb. 27 Graphic Arts report that cele-

GORDON STUDER

brates 1990 as the first year of the last decade. Assuming that "last decade" refers to the last decade of the 20th century, the celebration is one year premature.

The year 1991 will be the first year of the final decade of the 20th century, and the year 2000 will be the last year of that final decade and the 20th century.

We have only 10 years to correct this widespread misunderstanding.

*C.J. Thompson*
*Anaheim, Calif.*

*Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI: 323-1203; fax: (415) 243-3650. We reserve the right to edit letters for clarity and length.*

## Editorial

### Warranty first step, support second

Finally, after years of customer complaints, Apple has extended its warranty from 90 days to the industry minimum of one year.

Perhaps we can thank Apple's executive management for bowing to overwhelming customer demand, but the company has a long road to travel toward providing more than lip service to customer satisfaction.

As others have learned, it takes years for a company like Apple to shift from a technology-oriented focus to one that is more customer-driven.

With the increasing complexity of integrating the Macintosh into multivendor networks, the kind of service and support Apple needs to offer should be considered a valuable and necessary component of the sale.

For Apple to accomplish this much-needed transition, management will have to look for programs that reward dealers, value-added resellers and employees for solving customers' problems and providing a high level of support.

Currently, Apple USA rewards dealers with discounts for moving volumes of boxes. While this discount policy gives dealers incentives that ultimately help increase Apple's overall market share, it does not give them incentives to focus on service and support. For dealers, any kind of repair contract they sell, such as AppleCare, is icing on the cake.

Apple can't afford to hire thousands of sales executives and field-service technicians worldwide, so the company's future good will depend, in part, on shifting the burden of responsibility for customer satisfaction to the people in the existing sales and VAR channels.

Apple may have some solutions to the problem near at hand, however. During his tenure as president of Apple Europe, recently appointed Chief Operating Officer Michael Spindler developed a dealer sales strategy with an emphasis on service and support, which the European business market demanded.

The Apple Europe dealers are given extra discounts for employing specific numbers of trainers and service technicians and for providing training rooms and other facilities. This model could serve the needs of both customers and dealers in the United States, providing dollar incentives to serve customer needs rather than just move boxes. □

### It's not a leap, but IIfx keeps the faith

The introduction of the Mac IIfx this week may not appear like a significant leap forward, but if you look closely, you'll see that it has some worthwhile technology.

First, the IIfx keeps the faith. It is compatible with the vast majority of applications that run on the Mac Plus through the Mac IIci. If it were some extraordinary technological breakthrough, it almost certainly would not run the thousands of existing applications. Secondly, it includes eight new custom chips and a low parts count, which shows that Apple is spending a lot of money and effort on miniaturization and integration.

Third, the IIfx is the first Mac to offer direct memory access and specialized I/O processors, which are fully integrated into the CPU and help maintain a zero-wait-state system.

These facets of the IIfx, and others such as self-configuring video cards and the system software, may not be overwhelming by themselves, but collectively they show what makes the Macintosh different from its competitors.

The only problem is that the IIfx should have been out last year. Reducing the time it takes to bring products to market is a key issue that Apple needs to resolve. □

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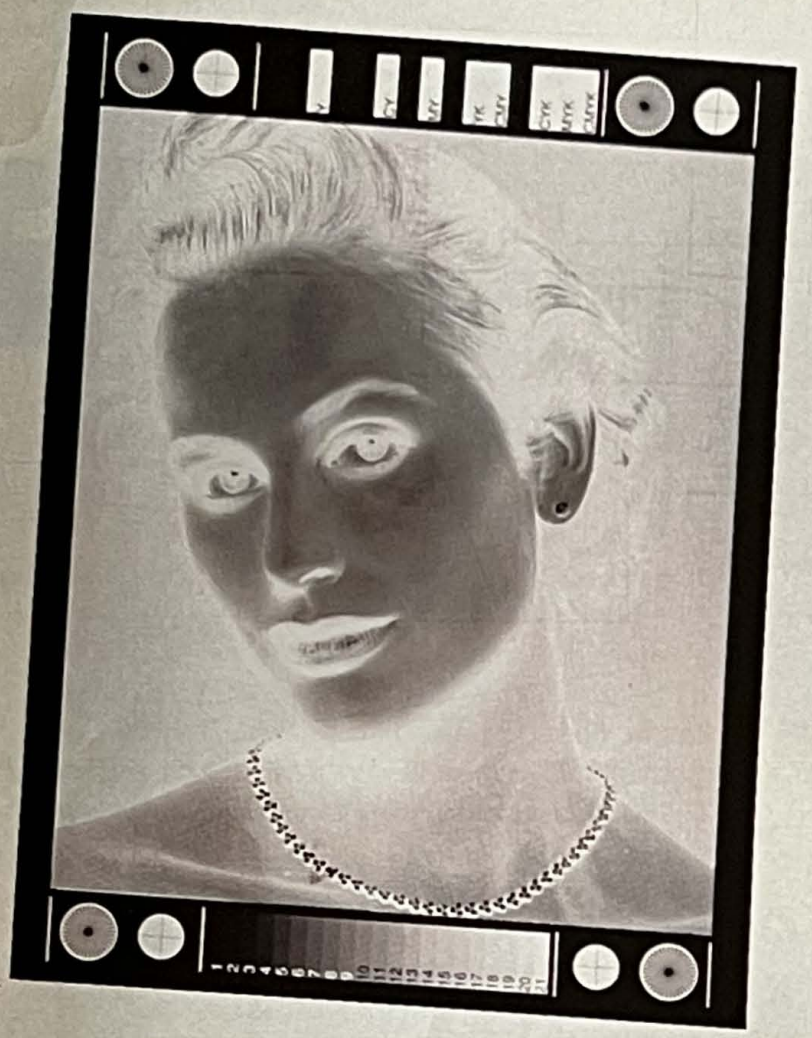

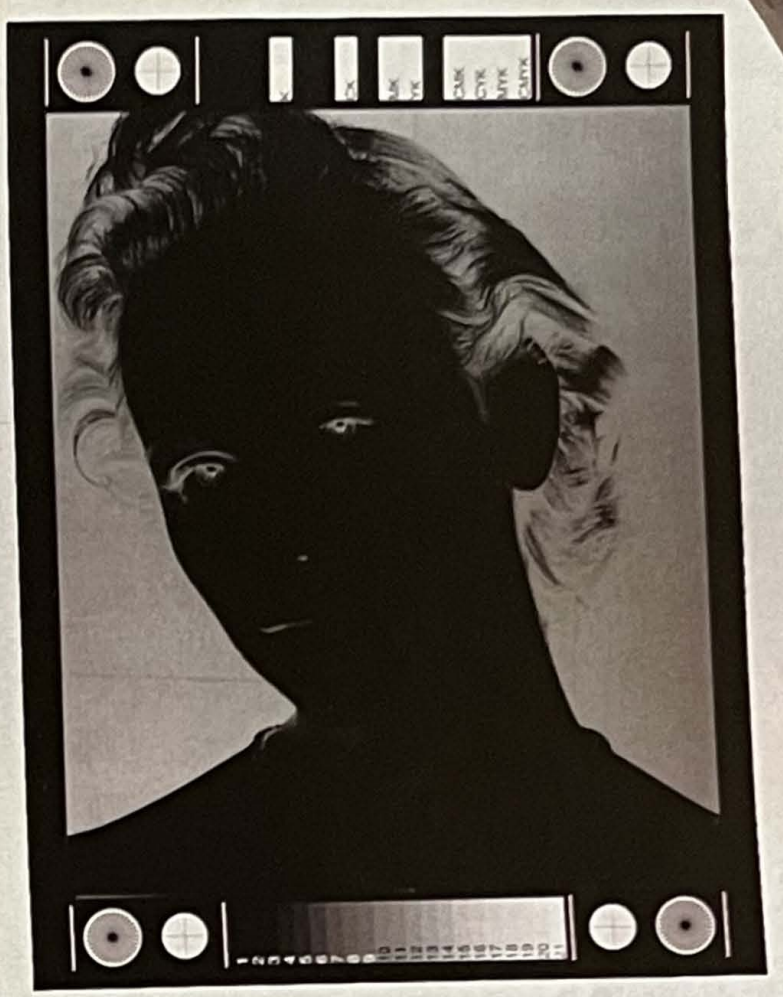

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# Macs face scientific dilemma

## *Data collection is an issue at Argonne*

**By Craig Zarley**

Five years ago, a scientist at the Argonne National Laboratory near Chicago made a startling discovery: The Macintosh is an ideal tool for capturing, analyzing and visualizing research data.

"If a scientist can visualize his data, his ability to understand it is greatly enhanced," said Bob Kampwirth, the Argonne research physicist who was the lab's pioneer Mac user. "Because of its graphics and the fact that for the first time I wasn't encumbered by an arcane user interface, the Mac became an extension of my creativity."

Kampwirth's enthusiasm for the Mac and his role in forming a Macintosh users group in 1985 helped spread the word to other Argonne researchers. And today, with about 600 systems in use, the Mac has become the predominant data-acquisition and research tool among the lab's 1,500 scientists.

The Mac's connectivity capabilities and improved DOS-to-Mac file transfer software have facilitated its acceptance in DOS-dominated corporate computing environments. But organizations that want to integrate Macs into a research environment still encounter a significant stumbling block: Most of the computer-controlled electronic instruments needed to collect data come with DOS or Unix software. The dearth of data-acquisition software for the Mac remains a persistent headache for Argonne scientists and Mac support personnel, who are forced to write virtually all Macintosh data-collection interfaces.

**Few Mac options.** Because of its intuitive interface and graphics capabilities, the Mac has flourished in an environment formerly dominated by IBM PCs. But while Argonne researchers are setting aside their PCs and compatibles in favor of the Mac, manufacturers of electronic measuring instruments continue to ignore this transition.

"Every time we buy measurement equipment we ask for Mac software," said Rodney East, systems manager for Argonne's material science division. But so far, he said, manufacturers have been slow to respond.

"Most scientists who are buying DOS or Unix machines are doing so not because they want to, but because the instruments they need come prepackaged with the systems," added John Mattson, a Northwestern University graduate student who writes much of Argonne's Mac-interface software.

Argonne uses GPIB (general-purpose interface bus) cards from National Instruments Corp. to interface with data-collection instruments. Each card can connect as many as 16 different instruments to a single Mac. While controller software — which consists of Find, Write To and Read From commands — is fairly easy to write, creating the Mac interface can be difficult, according to Mattson.

National Instruments has also developed LabVIEW, an object-oriented software package for controlling instruments from the Mac. But Mattson said he found LabVIEW 1.0 cumbersome and slow because it uses an interpreter rather than a compiler. National has just released LabVIEW 2.0, which is based on a compiler and therefore faster than the earlier version.

In addition, LabVIEW programming is done through a unique graphics approach that does not use the kind of syntax used in, say, BASIC or C. "In order to use LabVIEW, you have to learn a whole other programming environment," Mattson said. This means that LabVIEW programmers, a rare commodity at Argonne, are often the only ones who can maintain LabVIEW data-acquisition software.

**Looking for alternatives.** Argonne has introduced a HyperCard interface to data-acquisition equipment. HyperCard provides a quick-and-easy Mac interface without the need to program in Pascal or C, Mattson noted. But because of HyperCard's relatively slow speed and the lack of adequate documentation for external commands, Mattson said that HyperCard is not well-suited for logic-intensive applications. At times, this forces researchers to resort to DOS or Unix for data acquisition.

"Sometimes it's not worth our time and energy to rewrite data-acquisition software for the Mac, and so we just buy a PC to use as a controller for some instruments," said East.

But, said East, the Mac interface is key to integration in a research environment. "Scientists may not touch a piece of software for three weeks, and they don't want to have to remember how to use it," he said. "The systems have to be as straightforward as using a pencil."

With the HyperCard front end, scientists don't need to know how to operate the electronic data-collection instruments used in their research. They don't even need to see them. Physicist Kampwirth, for example, merely clicks on the Current or Voltage icon to collect data relevant to his experiments in superconductivity.

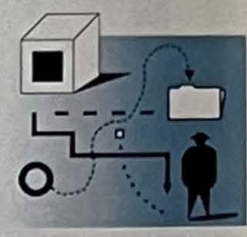
Gateways from Argonne's Ethernet network link Kampwirth to other superconductivity research centers at Northwestern University in Evanston, Ill., the University of Chicago and the University of Illinois at Urbana-Champaign. Scientists at each of the four sites have QuickMail addresses. Merely by entering a user's name, scientists can send memos or exchange data, thereby coordinating the nation's research efforts in superconductivity.

The Mac's Ethernet connections, coupled with Mac-to-DOS data-transfer software packages such as TOPS and LapLink, allow PCs and Macs to coexist. But the fact that instrument manufacturers still cater to a DOS environment troubles Kampwirth.

"A few years ago, the IBM PC was the dominant system and the Mac had no firm foothold," he said. "But even as the Mac becomes established in the scientific community, the instrument manufacturers see no sense in changing their user interface." □

STEVE LEONARD

**At Argonne National Labs, Rodney East, John Mattson and Bob Kampwirth (left to right) prefer the Mac for many scientific applications, but feel constrained by the lack of Mac software for data acquisition. "Most scientists who are buying DOS or Unix machines are doing so not because they want to, but because the instruments they need come prepackaged with the systems," said Mattson.**



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## DHL carries mainframe data to Mac

Redwood City, Calif. — For shipping and delivery company DHL Worldwide Express, data is a valuable commodity. To help find that data, the company has developed a HyperCard-based front end that lets Mac users easily and quickly call up host data from the company's mainframe.

Previously, product managers and other employees faced delays of up to two months to get the mainframe information they requested from DHL's MIS department. The problem: Only the company's programmers could access the Nomad database (from MUST Software International of Norwalk, Conn.) that holds most of DHL's corporate information. The database runs on an Amdahl 5840 mainframe, which emulates an IBM mainframe.

With assistance from Nomad- and HyperCard-proficient programmers from Sun Programming Co. of Cupertino, Calif., a 10-person team put together a system that lets managers, sales representatives and other Mac users access the database independently and create their own reports, eliminating the bottleneck.

**Fewer 'nickle-and-dime' requests.** It's made a big difference to programmers in the company's MIS department. HyperCard "has relieved our MIS people from about 90 percent of the maddening 'nickle-and-dime' requests they had previously handled," said Dean Christon, DHL spokesman. "Now they devote their time to other tasks, such as database development and high-level programming."

Mac users create a data query and design a form for the report in HyperCard. The HyperCard front end then uses MacMainFrame software from Avatar Technologies Inc. of Hopkinton, Mass., to access Avatar's MacMainFrame DX, a device that provides Mac-to-IBM 3278/79 communications. The requested data comes back as an ASCII file, which can be flowed into an Excel spreadsheet with the click of a HyperCard button.

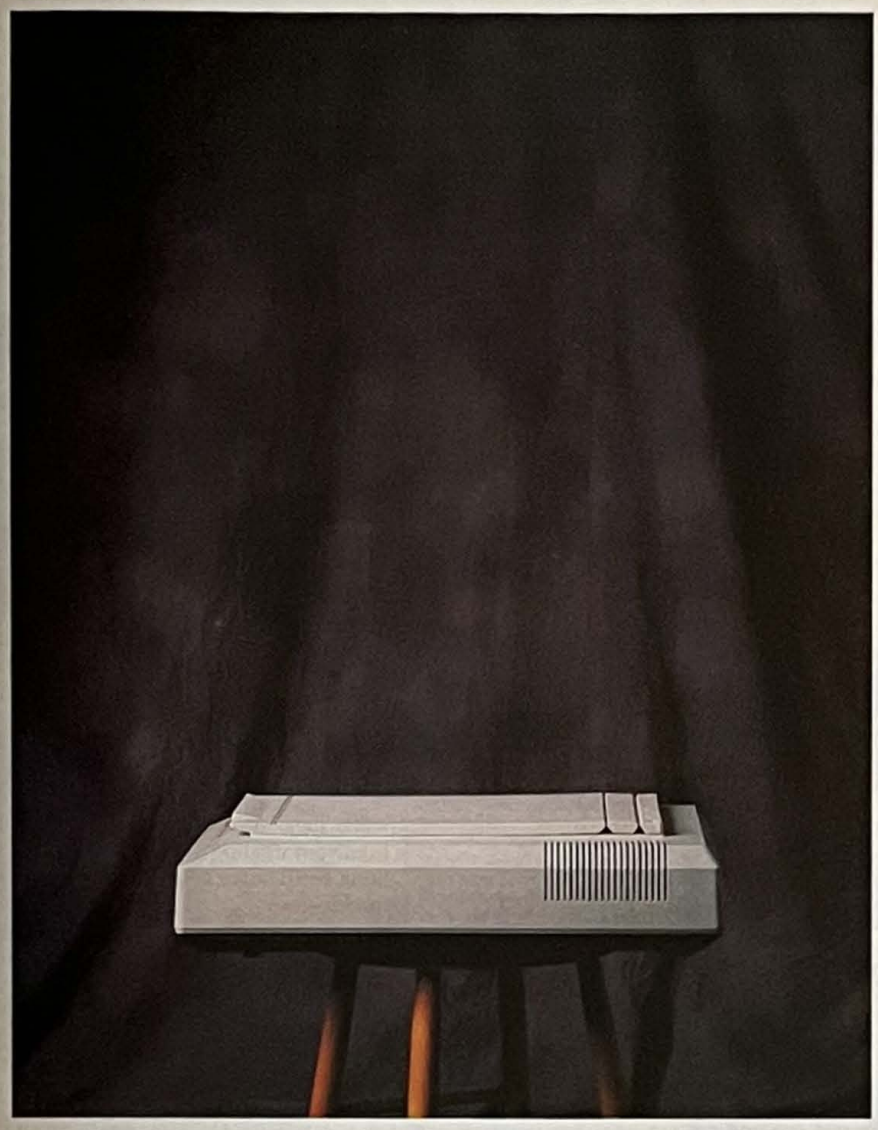
The whole process now takes as few as five minutes, said Barry Parr, a former DHL employee who was part of the development team. "Our managers are pretty proficient in Excel," he said, so this process puts the data in a familiar, easy-to-understand format and also gives them the tools to manipulate it.

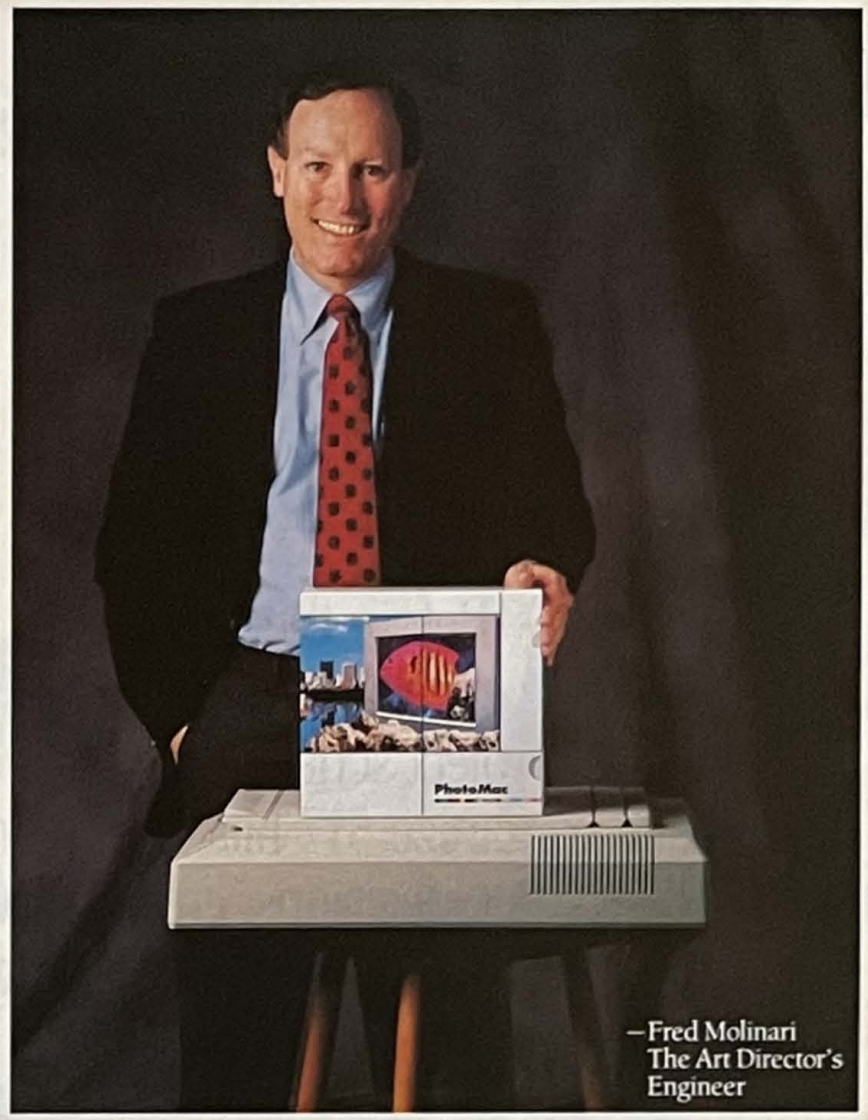
**Charting a new course.** Developing the gateway meant covering new ground, Parr said. "There wasn't a lot of support for Nomad-to-Macintosh transfers," he noted. "Nomad is very much oriented toward the IBM PC." The powerful fourth-generation database language is difficult and specialized, he said, but it "facilitates thinking about problems." Avatar's MacMainFrame DX was not yet available when the project was first under way, so the company provided DHL with a card that temporarily took the place of the device, Parr said.

**Enthusiastic response.** Managers at DHL have received the product enthusiastically. "Say we have a sales rep from Seattle who wants to know where Boeing is sending shipments. That's something we can do now, and quickly," Parr said. DHL employees can use the system to call up data such as sales figures, shipping routes and pricing.

A decision on whether to offer the HyperCard system for sale is pending, according to Sherri Dunn of DHL's public relations department.

"The interface in HyperCard is fairly generic, as are the APIs (application programming interfaces) to transfer data," Parr said, "but you still need some kind of back end." The current application of the gateway is specific to DHL's operations, he added. — *By Mitzi Waltz*



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**Tech Files**

# Ins and outs of buying a Mac fax modem

A fax modem is to the fax machine what a printer is to the copier. Instead of scanning in an image from an existing piece of paper, as is done on a facsimile machine, a fax modem generates the image electronically.

A fax modem also can be used to receive faxes electronically rather than directly printing them to paper. The fax modem exchanges a compressed bit-mapped image across phone lines with an ordinary office fax machine.

Fax modems as internal expansion boards have existed on IBM PCs and compatibles for years. Although the graphics required for a fax modem would appear to be a natural match to the Macintosh, Mac products have yet to live up to their potential.

Part of the difficulty is particular to the Mac. For example, users expect a product to be easy to use and well-integrated with the Mac operating system, and those requirements demand more complex software than on a PC. Mac products are also more expensive than those for the PC, because products have to include an external case and power supply to run across the entire Mac line.

BY JOEL WEST

Beyond that, the proper role of both Mac fax modems and PC fax boards is yet to be realized.

For example, the superior quality of fax-modem output makes it better for sending computer-generated images. Fax modems also have a marked advantage, as they support the ability to send the same message to multiple recipients. The best fax software will even allow you to keep your list updated from your existing Mac-based database, something you'll never get on a stand-alone fax machine.

But a fax modem's advantages are less dramatic at the receiving end, in that it forces you to leave an expensive computer switched on to receive messages. And as with any high-resolution bit-mapped document, faxes are slow to print on a PostScript printer.

A fax machine, on the other hand, automatically prints your messages as they arrive — something that background fax software can't do in today's Mac printing architecture.

A fax modem does have an advantage in forwarding a received message to another fax without the serious image degradation of a fax of a fax data transfer.

So how do you choose a fax modem? Your first concerns, of course, would be the usual ones of price, availability, warranty and support. Generally, the 9,600-bps products are more expensive than 4,800-bps models, but the price difference can be recovered if you send a lot of long-distance faxes.

But fax modems can be difficult to compare, because a good product includes a complex mixture of hardware, firmware (software in the modem) and Mac-based software. Software includes a Chooser-selectable output driver; low-level drivers for sending and receiving data; and a separate application that views and prints incoming faxes and routes complicated, multiple-document outgoing jobs.

If your fax modem will be a stand-alone device, you want a 1,200- or 2,400-bps model or some way to switch between the fax modem and your existing data modem.

For most offices, a more important issue is networking, since each fax modem requires a separate dedicated phone line. After all, you wouldn't want to publish three or four incoming fax numbers for a 20-person office.

But the bottom line for most people is reliability and utility, areas that have caused problems for first-generation Mac products.

The importance of software reliability should not be underestimated. The Chooser driver may not be compatible with your application or the firmware may not send correctly to a particular fax machine. Low-level drivers may not be compatible with Startup documents (INITs) and networking software; they could even bring your Mac to its knees when transmitting faxes.

As with any complex product, use a review to narrow your choices down to two or three products, or look for a friend's recommendation. Better still, find a product that you can try for a week, either on loan or with a money-back guarantee, to see if it meets your particular needs. □


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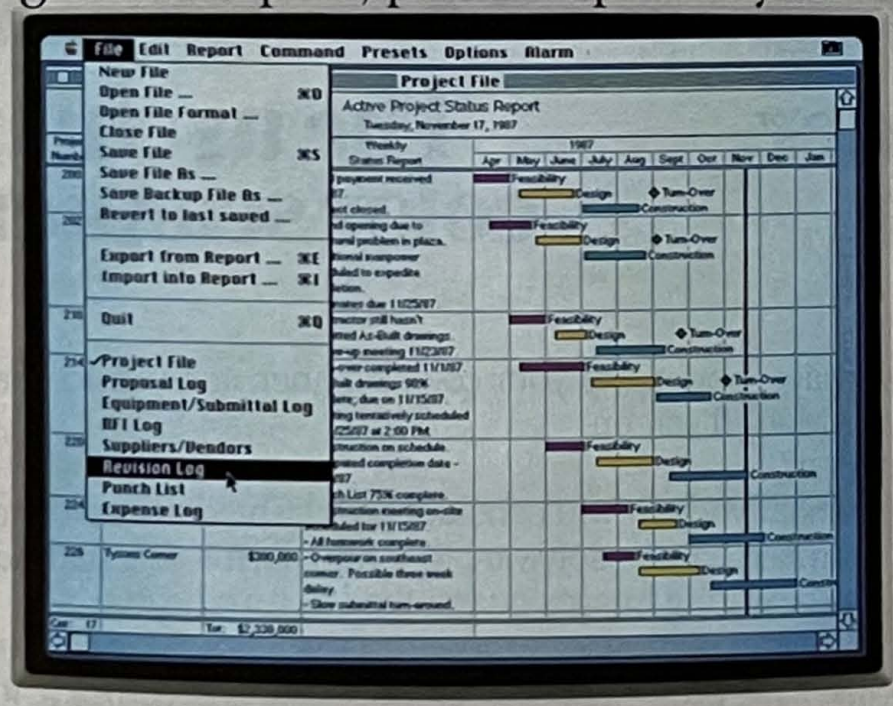


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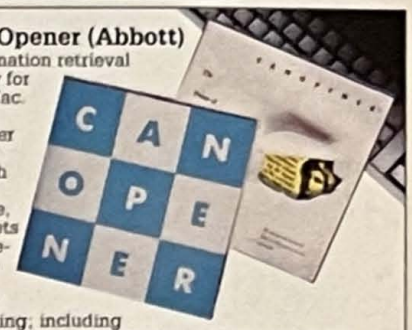


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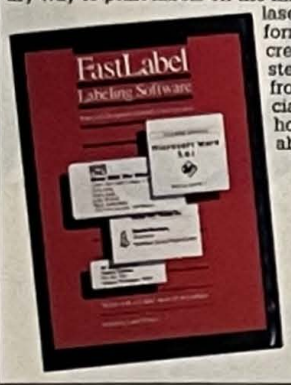


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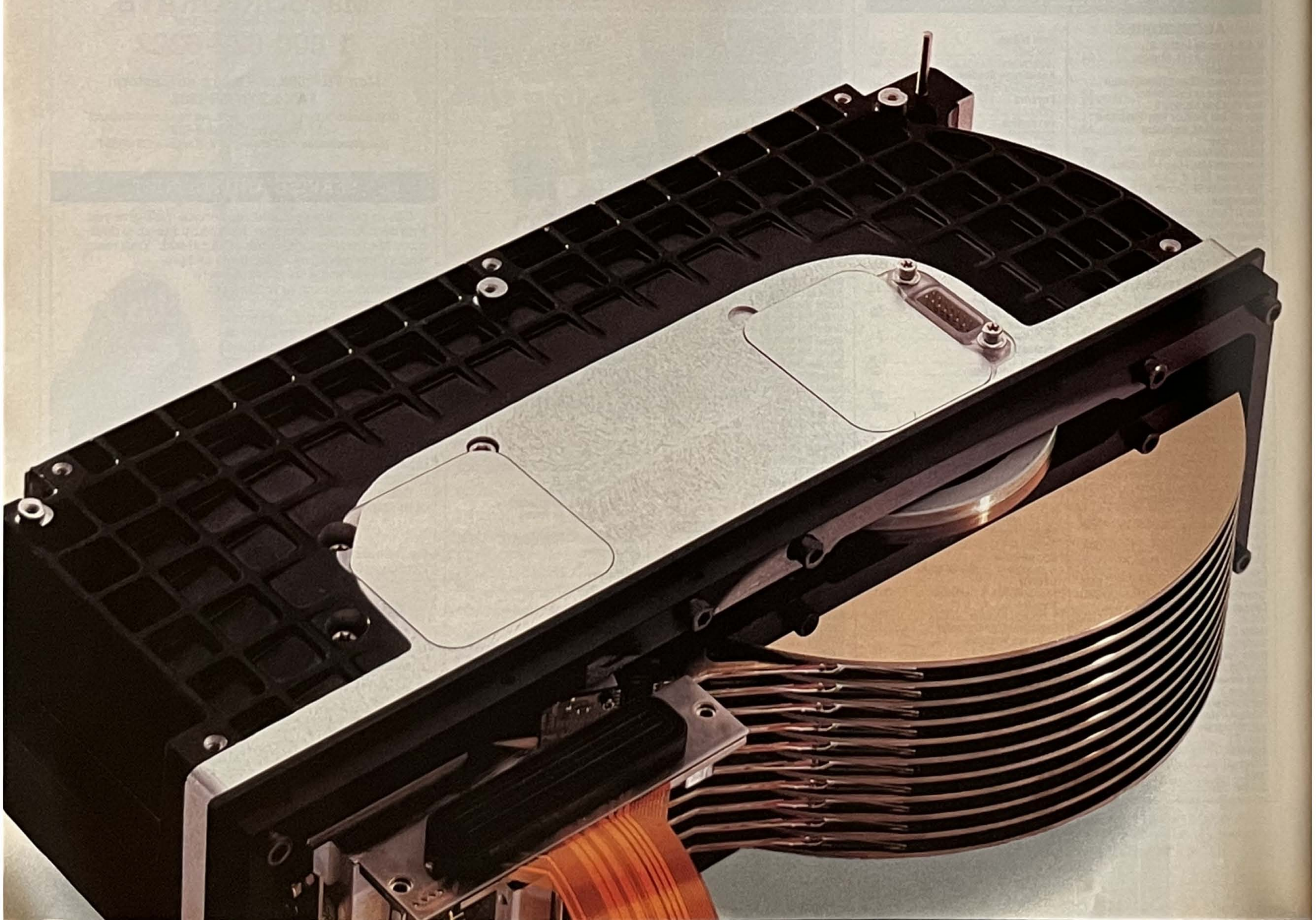

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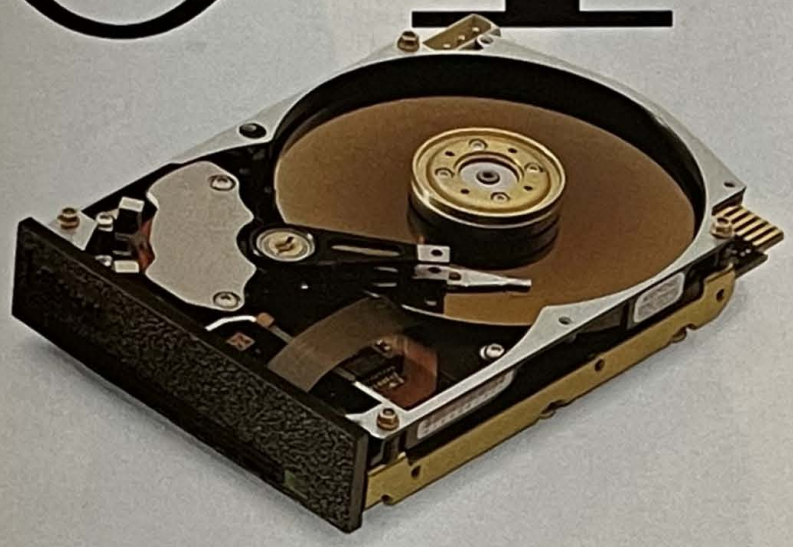

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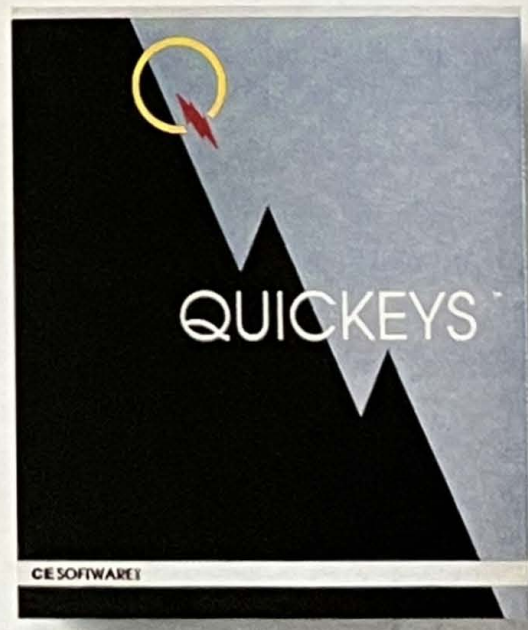


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Is your System folder a mess?

TRENDS

## QuickDraw printers move in on PostScript

*With ATM and the imminent release of System 7.0's TrueType, QuickDraw-driven printers are a real alternative to expensive laser printers.*

**By Clay Andres**

With PostScript laser printers having been in the limelight for so long, it is at times difficult to remember that QuickDraw-driven laser, inkjet and dot-matrix printers also play important roles in the Macintosh world.

PostScript laser printers may have to move over and share the glory. The release last December of Adobe Type Manager from Adobe Systems Inc. and the promised release of TrueType with Apple's System 7.0 this year has dramatically boosted the quality of all QuickDraw printers. It's time to look at those alternatives to PostScript laser printers.

**Lasers, the light of your dreams.** Start with Apple's LaserWriter II SC — no PostScript or AppleTalk. It's Apple's top-of-the-line QuickDraw printer and bottom-of-the-line laser printer. The SC fits nicely in Apple's product line but hasn't created much excitement in the market. Because its available fonts are few and it cannot be shared, at $2,799 the SC is not so much an affordable end in itself as it is a way to enter the LaserWriter market and later upgrade to an NT.

"The SC is not a single product but a member of a successful product line," said Nancy Stark, Apple USA's peripherals marketing manager.

Hewlett-Packard Co., leader in the desktop laser-printer market, early this month shipped its newest laser printer, the LaserJet III. In May, the company will ship an AppleTalk interface kit and an Adobe PostScript cartridge for the III that also plugs into the LaserJet IID and LaserJet IIP.

The two options must be used together to achieve Mac compatibility but result in three of the least-expensive Adobe PostScript printers on the market. Loaded with the AppleTalk kit and PostScript, the III is priced at $4,355, the IIP at $3,455 and the IID at $6,060.

Third parties offer even less-expensive ways for Macs to print with the HP line. Insight Development Corp., the company that wrote the Mac drivers for HP's interface kit, says its $149 printer driver, MacPrint, drives the III as well as the IIP and IID. Coupled with ATM, any one of the HP trio provides an attractive price-to-quality payoff.

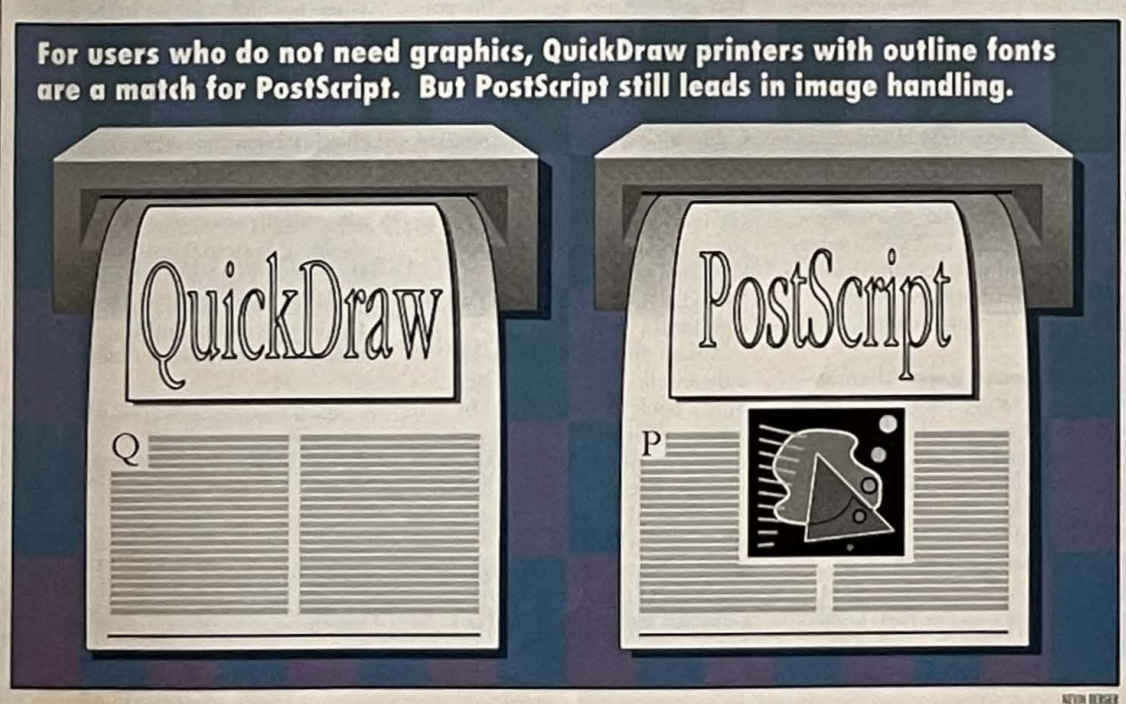
Kyocera Unison Inc., which manufactures a family of laser printers for the IBM PC market (including a high-speed PostScript/AppleTalk model), is giving away its new QuickDraw printer-driver software, MacScribe, so that anyone with an F-series Kyocera printer can now run it off of a Mac as well.

There are five models of F-series printers, starting with the F-800A for $2,395 and going up to an 18-page-per-minute model for nearly $9,000. Even though Kyocera claims its entry-level 800A is faster than a LaserWriter II SC, its machines are still expensive for non-shareable printers.

GCC Technologies Inc., a Mac innovator since its beginning, is already into its second-generation QuickDraw laser printer — the PLP II. PLP stands for Personal LaserPrinter, and at $1,399, it's certainly affordable. It does everything the SC can do and comes with outline fonts from Bitstream Inc. "I vastly prefer the Bitstream fonts to the SC fonts," said Jack Hobson-Dupont of The Macintosh Man, a consulting and software development company in Nantucket, Mass. "The outline fonts work better and the price could hardly be more right."

**Inkjet: Visions of squids.** If you can't fit a PLP II into your budget, you can give up on lasers for now. But you don't have to give

*See Trends, next page*




**For users who do not need graphics, QuickDraw printers with outline fonts are a match for PostScript. But PostScript still leads in image handling.**

KEVIN BERGER

COMPARISONS

## Dot-matrix printers: GCC vs. Toshiba

**By Rick LePage**

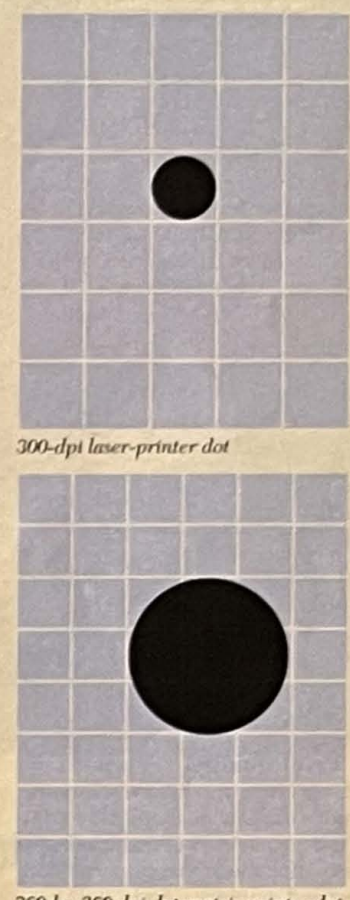
It is hard not to hear the death knell for the primeval dot-matrix printer. With laser technology improving and prices falling, the laser printer is well on its way to becoming entrenched as the peripheral of choice for most business users. Recent advances by GCC Technologies Inc. (with the PLP II) and Hewlett-Packard Co. (with the Laserjet IIP) have brought laser printer prices to less than $1,500, down from the $4,000 to $7,000 prices these machines demanded a few years ago. Now they're priced dangerously close to the magic $1,000 barrier. Inkjet printers are also a threat; in particular, the HP DeskWriter's near-laser quality has proved very popular.

The basic characteristics of dot-matrix printers are enough to turn away all but the most price-conscious users. They are noisy, slow, and their output does not equal the crisp clarity found with a 300-dpi laser printer. While their main selling point has generally been their low cost, dot-matrix printers can be the peripheral of choice in some situations, mainly when printing on multipart forms and continuous-feed labels.

Two companies, GCC and Toshiba America Information Systems Inc., are bucking the trend away from impact printers, hoping to carve a niche market for their recent dot-matrix offerings. GCC is building on its native Macintosh printer technology with the WriteImpact, which is based on Panasonic's KX-P1124 printer. Toshiba is offering three printers for the Macintosh, all driven by the company's MacMatrix printer driver. The base model is the P321SL, which is functionally equivalent to the WriteImpact. Also available is the P321SLC, which adds color capabilities to the P321SL, and the P341SL, which has a wide carriage. The offerings from both companies represent the state of the art in Macintosh dot-matrix printer technology.

**Basics.** The P321SL and the WriteImpact list for $699, making them price competitive with the $595 ImageWriter II. The P321SLC carries an $899 price tag

*See Comparison, next page*



*300-dpi laser-printer dot*

*360-by-360 dpi dot-matrix printer dot*

**A 360-dpi dot-matrix printer uses larger dots (bottom) than a 300-dpi laser printer (top), resulting in fuzzier output.**

## Comparison

*From previous page*

and the P341SL is $949. Toshiba's MacMatrix software, which includes the printer driver and a cable, costs an additional $49. GCC provides added value with the WriteImpact by including a free print spooler and a desk accessory for envelope printing, in addition to the cable. The MacMatrix manual mentions that third-party print spoolers will work with the P321SL, but we were unable to test any of them with the printer.

The WriteImpact and the P321SL use QuickDraw-based outline-font technology rather than PostScript. Both printers include Times, Helvetica, Courier and Symbol typefaces, but GCC adds the Helvetica Narrow and Palatino families too. GCC also sells additional type packages that can be used with the WriteImpact. Adobe Type Manager yielded excellent results with PostScript fonts on either printer.

In general, we found both printers to be well-designed and their drivers compatible with the current versions of most mainstream Mac applications. The Toshiba takes more time to set up because the user must first configure the printer for Mac operation and then install the software.

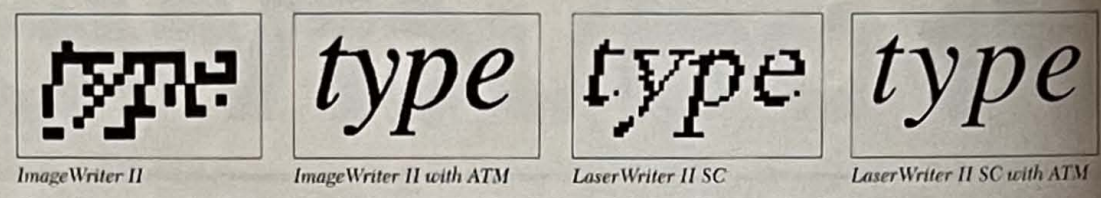
**Print quality.** The printers have a range of output resolutions, from a draft mode for quickly printing large amounts of text to a high-resolution mode that can print both text and graphics cleanly. Both units can print unidirectionally, which is best for printing accuracy, or bidirectionally, a compromise that offers slightly lower quality output with a faster print speed.

The P321SL has the edge over the WriteImpact in this category, offering a better output resolution and an excellent draft mode. Included with the MacMatrix package are three Mac screen fonts that correspond to ROM-based fonts in the P321SL. Each typeface is limited to a single point size and style, but they help to increase readability and reduce spacing problems that most dot-matrix printers have when printing in draft mode. The WriteImpact does not use any of the fonts built into the printer by Panasonic, and printing in draft mode is a hit-or-miss proposition. To get readable draft output with the WriteImpact, it is necessary to experiment with different typefaces to get the best possible printed copy.

**Non-square resolution.** With laser printers, resolution is clean and simple; most yield 300 dpi, as measured in both horizontal and vertical directions. The default resolution of the WriteImpact and the Toshiba printer drivers, however, is a non-square 180 by 360 dpi. The P321SL offers a maximum resolution of 360 by 360 dpi, which is extremely slow and intended only for high-quality output, and both printers can print in a square 180-dpi resolution as well.

This 360-dpi statistic may lead

*See Comparison, Page 42*




*ImageWriter II* | *ImageWriter II with ATM* | *LaserWriter II SC* | *LaserWriter II SC with ATM*

**Above are output samples of 48-point Times italic generated with and without Adobe Type Manager outline fonts.**

## Trends

*From previous page*

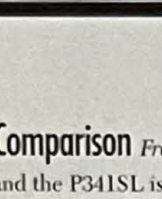
up on laser quality. HP's DeskWriter inkjet printer prints at 300 dpi on plain paper (many inkjet printers work better with special non-bleeding papers). It's not as fast as a laser, but it's quieter than a dot matrix, relatively compact, and it costs $1,195. "It's LaserWriter quality for one-third the cost," said Richard Goldberg, chief financial officer of Marshall's of Milford, a retail jewelry store in Milford, Mass. "Because of me, three other people I know have bought them."

Inkjets are so mechanically simple that they can be made small and sturdy enough to be portable printers. Eastman Kodak Co.'s Diconix printers are about the size of a thick novel and can be run on NiCad batteries.

The Diconix M150 Plus has just been released and comes with Adobe's ATM for $699. For $579 you can get the older model Diconix M150 packaged by GCC as the WriteMove. GCC's driver has some additional niceties, such as a preview capability and Bitstream fonts.

"Anyone who has ever lugged a Mac and ImageWriter doesn't want to do it again," said Arthur Greenwald, executive producer of Evening Magazine for KDKA-TV in Pittsburgh. "It's amazing how good the WriteMove is for the size of the thing. I have the Portable and have actually printed stuff out in my airplane seat with battery power. You can make script changes literally on the fly."

*See Trends, Page 46*



### In summary: Dot-matrix printers

The GCC WriteImpact and the Toshiba P321SL, P321SLC and P341SL dot-matrix printers represent the best in impact-printer technology currently available for the Mac. They offer quality output at an affordable price and, depending on your needs, any of the printers should perform well.

The WriteImpact is priced at $699 and is based upon the Panasonic KX-P1124 print engine. It comes with six outline-based font families from Bitstream, a spooler, and a desk accessory for managing addresses and printing envelopes. Of all the printers we looked at, the WriteImpact rates highest on paper-handling features. If you are buying a dot-matrix printer for printing on tractor-fed labels or preprinted or multipart forms, the WriteImpact is the best choice.

Toshiba's units don't match GCC's in paper handling, but the company offers three models for different market segments. The basic model, the $699 P321SL, is equal to the WriteImpact in function, while the P321SLC has color capabilities for an additional $200. The P341SL, priced at $949, features a wide carriage for printing on larger paper sizes.

Toshiba does not offer a spooler with its printers and provides only four outline-font families. These printers are generally slower than the WriteImpact, except in draft mode, in which the Toshiba machines shine. Toshiba includes screen fonts that correspond to fonts resident in the printer's ROM. When using these fonts (which are limited to a single point size each) to print in draft mode, the P321SL is fast and offers extremely readable output.

The P321SL also has a very high quality printing mode that is extremely slow but produces results superior to the WriteImpact's best output.

## MacInTouch

RIC FORD AND RICK LEPAGE

# Tracking down thieves through the wire

ISSUES AND TRENDS

**Tracing network spies.** The virus scares of the past few years have helped to heighten awareness about protecting information stored on computers, but it is obvious that data security issues are still on the back shelf in many companies. Perhaps Clifford Stoll's "The Cuckoo's Egg" will raise the interest level a notch higher and lead more people to do something. Stoll was trained as an astronomer, but when his research grant ran out in late 1986, he took a job as a systems manager at Lawrence Berkeley Laboratory in Berkeley, Calif. On his second day at work, through a 75-cent accounting error, he stumbled onto the trail of an intruder who had hacked his way into the LBL system via Tymnet. It quickly became apparent that the interloper was not a juvenile hacker but someone with a clear interest in classified information and a solid background in Unix.

"The Cuckoo's Egg" is Stoll's story of tracking the infiltrator, and as a mystery, it plays well. Stoll does a good job of detailing the circuitous route that the electronic spy took to get to LBL's computers and his attempts to get into more secure, defense-related systems also on the Arpanet network.

**Confidence gaps.** Many aspects of the story are shocking, but they didn't necessarily surprise us. We have seen systems with default passwords or a complete lack of passwords for systems-manager accounts. What was surprising, however, was how much effort Stoll had to put in to get government agencies (such as the FBI) to take notice of the intruder and to offer

more than token assistance, even after it became apparent that the intruder was going after defense-related information. For instance, the name of the National Computer Security Center would lead one to believe that it might be a clearing-house for information regarding security issues. In actuality, the NCSC is the unclassified arm of the National Security Agency, the government's top-secret intelligence-gathering group, and officials at the NCSC could do little to help Stoll ward off the intruder or offer advice on other potential holes in his system.

Many of the techniques that the spy used to move around the networks and cover his tracks were known to groups such as the NCSC, but little had been done to counter them.

Although the Macintosh has only a walk-on role in the story, Stoll's book should be read by anyone with an interest in computer security issues. With networking one of the buzzwords of the 1990s, it seems imperative that we come up with ways to ensure the security of data moving from machine to machine, whether it is between Macs in an office or between IBM mainframes in supposedly secure locations. "The Cuckoo's Egg" is published by Doubleday Books and should be available in most bookstores.

BUGS & TIPS

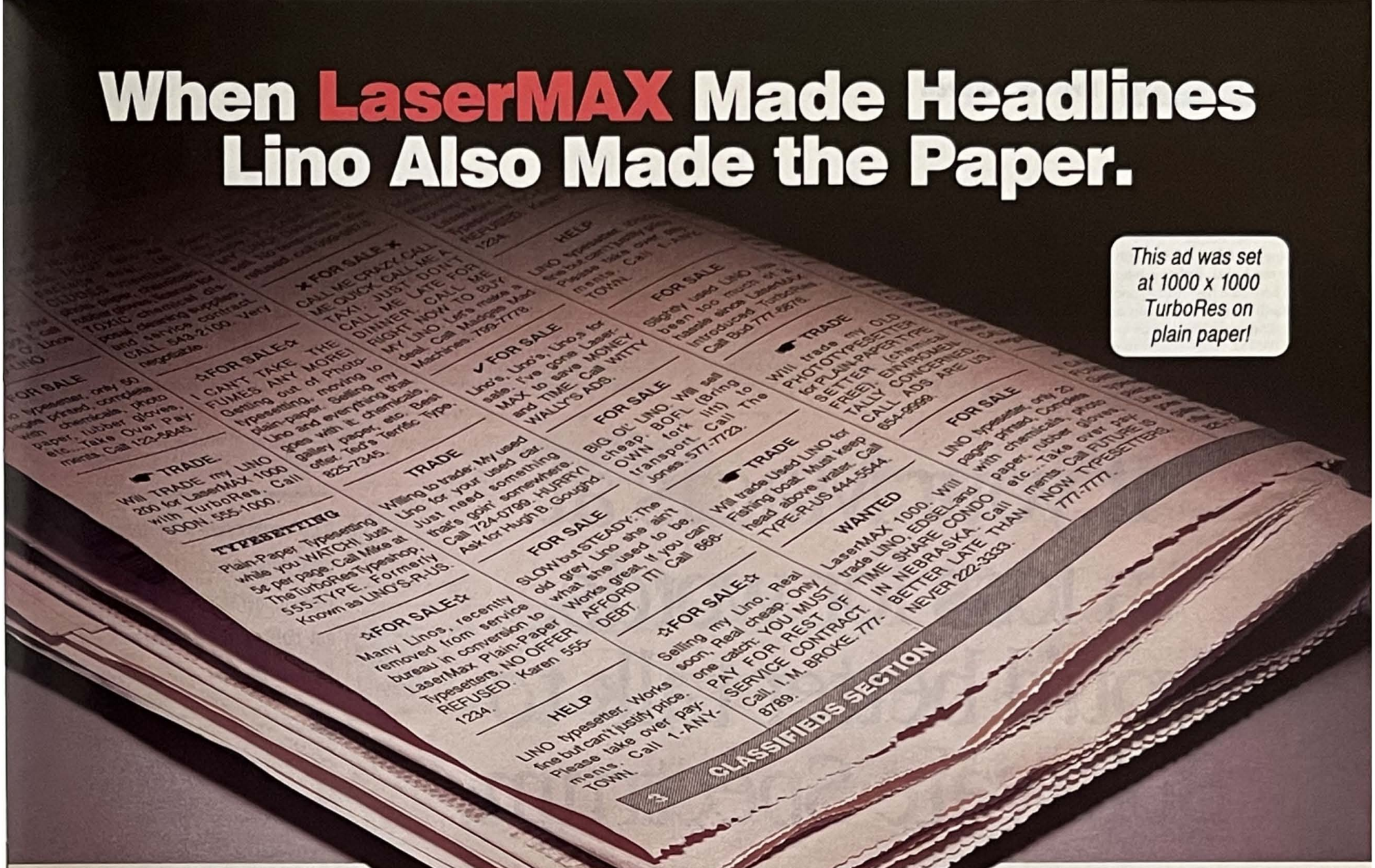
**Watch the cursor.** From time to time Apple software engineers add undocumented features to the Macintosh system, and System 6.0.4 is no exception. When using Apple's Installer program to update your Mac to System 6.0.4, type the word "ski" when the first screen is displayed. What will appear is a new window that allows you to choose an icon to replace the Macintosh's standard "busy" cursor of the watch with the spinning hands.

**Reducing desktop clutter.** If you hold down the Option key when opening a folder in the Finder while running System 6.0.4, that folder's parent window will automatically close.

Another well-known Finder trick that has been around since System 5.0 is to hold down the Option key and click in a window's close box to close all the open windows on the desktop. System 6.0 still sports this feature, but you also can close all windows if you hold down the Option key when quitting an application to return to the Finder.

*We welcome comments at MacWEEK, 4 Cambridge Center, Third Floor, Cambridge, Mass. 02142; (617) 497-2600; (617) 497-2646 (fax). Electronic Mail: CompuServe: (Ric Ford) 75410,2612, (Rick LePage) 76117,1763, GEnie, America Online, Delphi, PAN: MACWEEKBOS, Connect: RICKLEPAGE, RICFORD; AppleLink: (address to "MacInTouch" in Subject), MACWEEK; Internet: MACWEEKBOSTON@MCIMAIL.COM; MCI Mail: MACWEEKBOSTON.*

# When LaserMAX Made Headlines Lino Also Made the Paper.


This ad was set at 1000 x 1000 TurboRes on plain paper!
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Many Linos, recently removed from service bureau in conversion to LaserMax Plain Paper Typesetters. NO OFFER REFUSED. Karen 555-1234.
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LINO typesetter. Works fine but can't justify price. Please take over payments. Call 1-ANY-TOWN.
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TurboRes enhances the capabilities of all LaserMAX products, which come complete with 35 standard typefaces, and work with the Macintosh II, IIx, IIcx, IIci, and beyond.

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If you already own an Apple LaserWriter, you're in luck. With a LaserMAX MX6 controller you can boost your resolution from 300 dpi all the way up to 800 x 800 TurboRes for **N**ear **T**ypeset **Q**uality.

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If you're the type who never settles for less than the MAX, you'll want the LaserMAX 1000. With 1000 x 1000 TurboRes, you'll need a printer's loupe to prove that the output isn't traditional typesetting. But unlike phototypesetting, the LaserMAX 1000 is:

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## Comparison

*From Page 40*

you to believe that these printers can offer better than laser output at a lower cost, but what is being touted is addressability and not necessarily resolution. Either printer can place a dot anywhere on a page within one one-hundred-eightieth of an inch vertically and within one three-hundred-sixtieth of an inch horizontally. (The P321SL's high-quality mode can place a dot within one three-hundred-sixtieth of an inch in either direction.)

The print-quality limitation of these printers is the size of the dot that they place on the page, which is significantly larger than that of a laser printer. While printers such as the LaserWriter IINT can address to within one-three-hundredth of an inch and place a dot that size on a grid, the smallest dot size that the WriteImpact and the P321SL can place is about one two-hundred-twenty-seventh of an inch in diameter.

One of the prerequisites for a dot-matrix printer is that it must have good paper handling. In this case, the WriteImpact simply blows away any dot-matrix printer we have seen for the Mac. The printer not only has standard tractor and friction-feed mechanisms but also includes a paper path that feeds up from underneath the printer. When using this method, the tractor guides pull the paper up, over and away from the platen. This feature makes the WriteImpact ideal for printing on labels and multipart forms.

The WriteImpact also has a manual feed mechanism that loads through the front of the printer and bypasses the full curl of the platen. The printer has paper guides that align the paper properly, and we could load envelopes manually without a problem.

Other features of the WriteImpact include a paper sensor that places the top of the page at the proper height for printing and a button on the front panel that elevates the perforated line of tractor-fed paper to the printer's plastic tear guide.

The Toshiba printers have paper-handling features that are better than most we have seen, but they are not as complete as the GCC unit. Like the WriteImpact, the P321SL will advance paper automatically to the proper place on the platen, as well as retract it when the printer is not in use, which is intended to prevent the paper from curling. The Toshiba printer was more susceptible to paper misfeeds and jams than was the WriteImpact, which printed labels, continuous forms, envelopes and stationery without a hitch.

*A dot-matrix printer must have good paper handling. The WriteImpact simply blows away any dot-matrix printer we've seen for the Mac.*

**Performance.** Few people will buy these printers for their speed. Printing in 180 by 360 dpi unidirectional mode, the WriteImpact was generally faster than the P321SL. The QuickSpool II spooler that GCC bundles with the WriteImpact will not reduce actual printing times, but it will return control of your Mac much sooner.

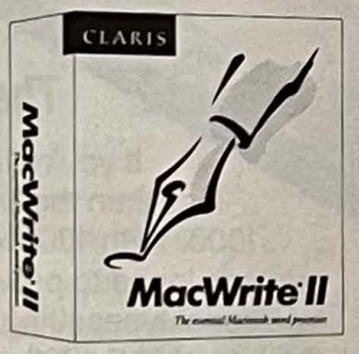
Print times will vary depending on the type of document printed, but a five-page MacWrite II document took almost seven minutes to print with the WriteImpact and 12 minutes on the P321SL, and these figures were consistent with other tests we made. Printing 200 labels, with smaller amounts of text to be printed, narrowed the gap a bit, taking a little over seven minutes to print on the GCC printer and more than eight on the Toshiba unit. Printing in Toshiba's highest-quality mode almost doubled the times, but the medium-quality mode will be more than sufficient for most needs.

**Conclusions.** We like the WriteImpact for its superior paper-handling features and speed. Anyone who needs to print standard multipart forms or tractor-fed labels on the Mac should buy this printer. The addition of a spooler and an envelope-printing desk accessory make it a good all-around value as well.

The P321SL's best attribute is the excellent readability and high speed of its draft mode. Its paper handling is not as sophisticated or trouble-free as the WriteImpact, but it has an excellent, if extremely slow, high-quality mode. If you want color printing or have the need to print on wider paper sizes, Toshiba's P321SLC and P341SL get the nod.

If, for reasons of price or special needs, you have to purchase a dot-matrix printer, any of these units will perform satisfactorily. The print quality is comparable to, or better than, other impact printers on the market. It's not laser quality, but it's good enough for many users. □


If your Mac is at a loss for words, you'd better talk to Software Spectrum.

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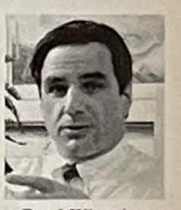

Paul Wheeler
Boise, ID.
*"Paper handling."*

C&C Computers and Communications

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And as for operating noise? Well, its name speaks for itself.

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More, faster, better. Our engineers heard it time and time again. So they gave the Silentwriter2 a lightning-quick processor and lots of memory. So you can use today's most sophisticated graphics software. For better-looking brochures, labels and

*Interchangeable cassettes let you switch document sizes in seconds.*

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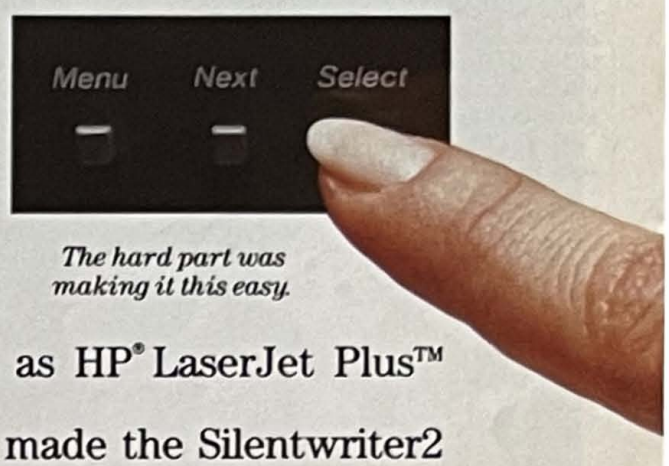
*"To have Adobe® PostScript® built in would be key. The more fonts, the better."*

We agree. So, the Silentwriter2 290 comes with a built-in PostScript interpreter as well as HP® LaserJet Plus™ emulation. And we made the Silentwriter2 260 with features like LaserJet® II emulation, which supports most standard software. What's more, it's a terrific value—the best in its price range. Plus, both are members of the most complete line of personal computers and printers available.




*The hard part was making it this easy.*

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Stamford, CT.
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**Print Speed:**
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**Language:**
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**Interfaces:**
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**Fonts:**
260: 8 resident, LaserJet-compatible, optional SilentFont™ cards
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Screen fonts for Macintosh® and Microsoft® Windows

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## Trends

*From Page 40*

**Nightmares of efficiency.** Before the "laser standard," people spoke of letter-quality printers with reverence. Just as some offices still have typewriters, the letter-quality dot-matrix printer still has its uses. They may be big and noisy (though less so than they used to be), but for office correspondence and forms handling, you can't beat the price.

Apple's ImageWriter LQ had a series of software problems when it was introduced, but even with the bugs removed, $1,399 is an expensive printer in this class. The LQ has a full range of paper-handling options, such as envelope feeders, which laser printers generally lack, and it has an AppleTalk option that no other dot-matrix manufacturer offers. But for half the price, $699, you can get GCC's WriteImpact, which has comparable features, Bitstream fonts and higher resolution.

Toshiba America Information Systems Inc., the king of 24-pin dot-matrix printers, recently shipped MacMatrix, a $49 QuickDraw driver that can be used with any of its four impact printers. The entry-level P321SL starts at $699. Like Kyocera's MacScribe, MacMatrix is a way for MIS managers to buy and maintain one kind of printer for mixed platform environments.

System Sales of Arizona Inc., a marketer of electronic components based in Mesa, Ariz., bought four now-discontinued 351SX machines to use with its old PCs. The company just bought five Mac IIcx machines and is getting rid of the PCs, but is keeping the Toshiba printers. "I was amazed how cleanly MacMatrix works," said Bill Toon, one of System Sales' engineers. "We'll be using lasers for presentation-quality material, but for day-to-day operating information, we'll use the Toshibas more. In draft mode, they're faster than the lasers."

**The future.** Both ATM and TrueType are adding PostScript-like value to QuickDraw printers, not only by providing outline fonts, but also because documents using those fonts may in the future be able to be duplicated with the same fonts from non-Mac platforms. At the same time, more of the large printer vendors are offering QuickDraw drivers. The result is that managers in business environments won't have to pay premium prices of a PostScript machine but will still be able to get some of its benefits. And they will be able to shop a truly wide open, competitive market. □

## Product Info

APPLE
**ImageWriter LQ:** $1,399;
**LaserWriter II SC:** $2,799
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(408) 996-1010

GCC TECHNOLOGIES INC.
**PLP II:** $1,399; **WriteMove:** $579;
**WriteImpact:** $699; **sheet feeder:** $169
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**DeskWriter:** $1,195; **PaintJet:** $1,395;
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**AppleTalk Kit:** $275;
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(800) 752-0900

EASTMAN KODAK CO.
**Diconix M150 Plus:** $699
343 State St., Rochester, N.Y. 14650;
(800) 255-3434.

INSIGHT DEVELOPMENT CORP.
**MacPrint:** $149
2200 Powell St., Suite 500, Emeryville, Calif.
94608; (800) 825-4115

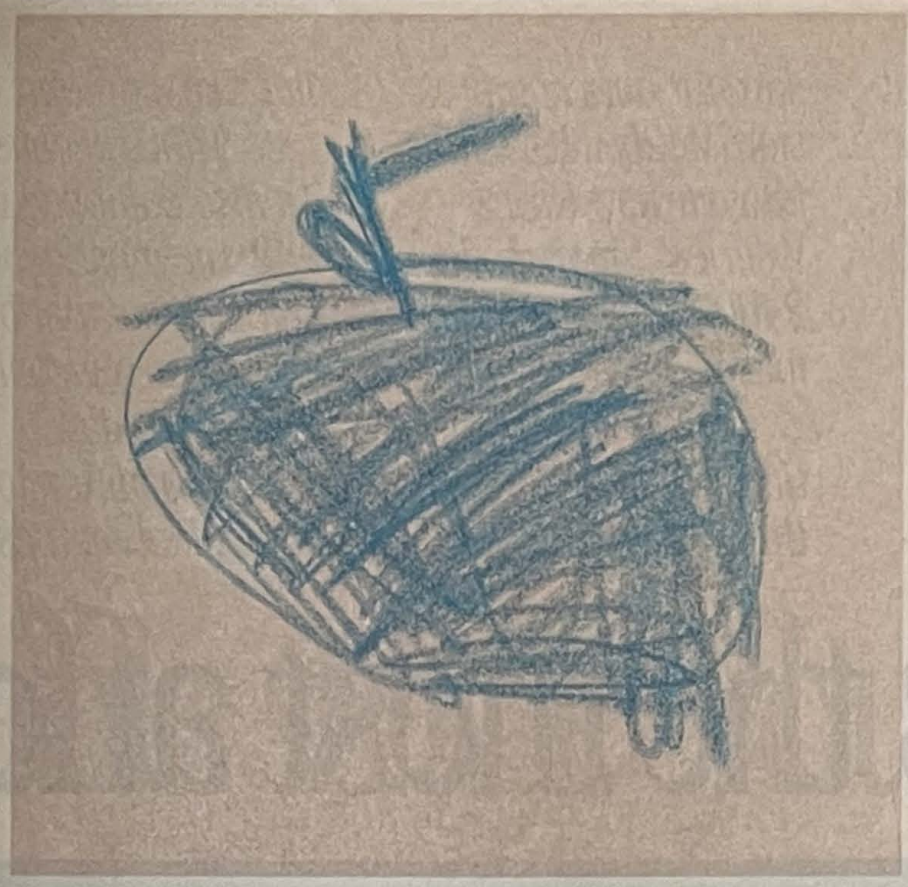
KYOCERA UNISON INC.
**F800A:** $2,295; **F1000A:** $2,895; **F2010:**
$4,295; **F2000A:** $4,695; **F3010:** $8,395
1321 Harbor Bay Parkway, Alameda, Calif. 94501;
(415) 748-6680

SHARP ELECTRONICS CORP.
**JX-730:** $2,195
Sharp Plaza, Mahwah, N.J. 07430-2135;
(201) 529-8200

TEKTRONIX INC.
**ColorQuick Ink-jet:** $2,495
Graphic Printing and Imaging Division, P.O. Box
1000, M-S 63-630, Wilsonville, Ore. 97070;
(503) 682-7377; (800) 835-6100

TOSHIBA AMERICA INFORMATION SYSTEMS INC.
**MacMatrix:** $49; **P321SL:** $699; **P321SLC:**
$899; **P341SL:** $949; **sheet feeder for**
**P321SL and SLC: $349** (second bin attachment available for $249); **single-bin sheet feeder for P341SL:** $499; **dual-bin sheet-feeder:** $699
Computer Systems Division, 9740 Irvine Blvd.,
Irvine, Calif. 92718; (714) 583-3000; (800) 334-3445

On March 6, Quark Will Announce The End Of Desktop Publishing.



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Call 1-800-289-2526 for a free booklet that answers many of your questions about Mac-to-mainframe connectivity. Or write: Avatar Corporation, 65 South St., Hopkinton, MA 01748.

If you're looking for a connectivity solution that will let you get the most out of your Macintosh computers, it will really give you something to chew on.

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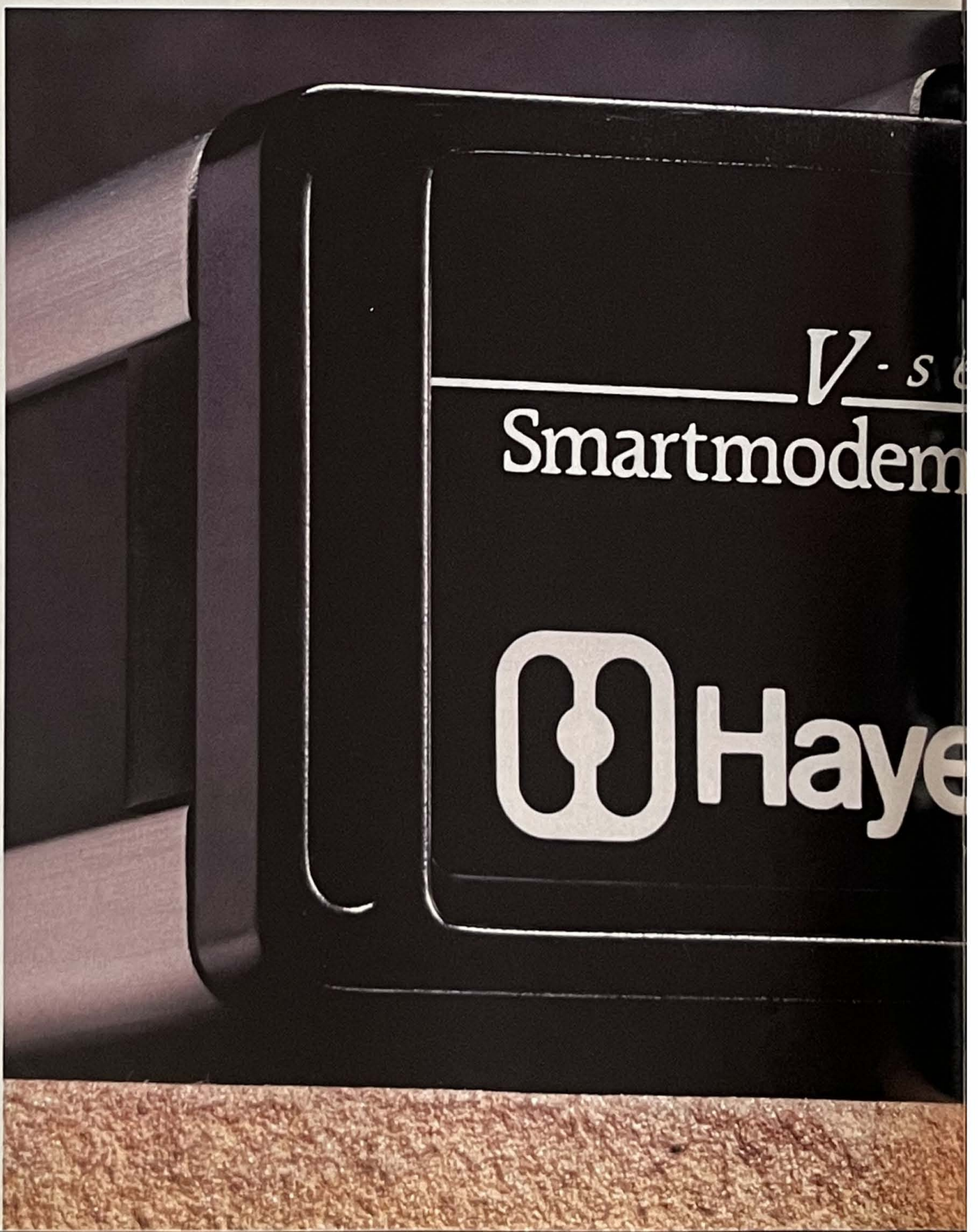

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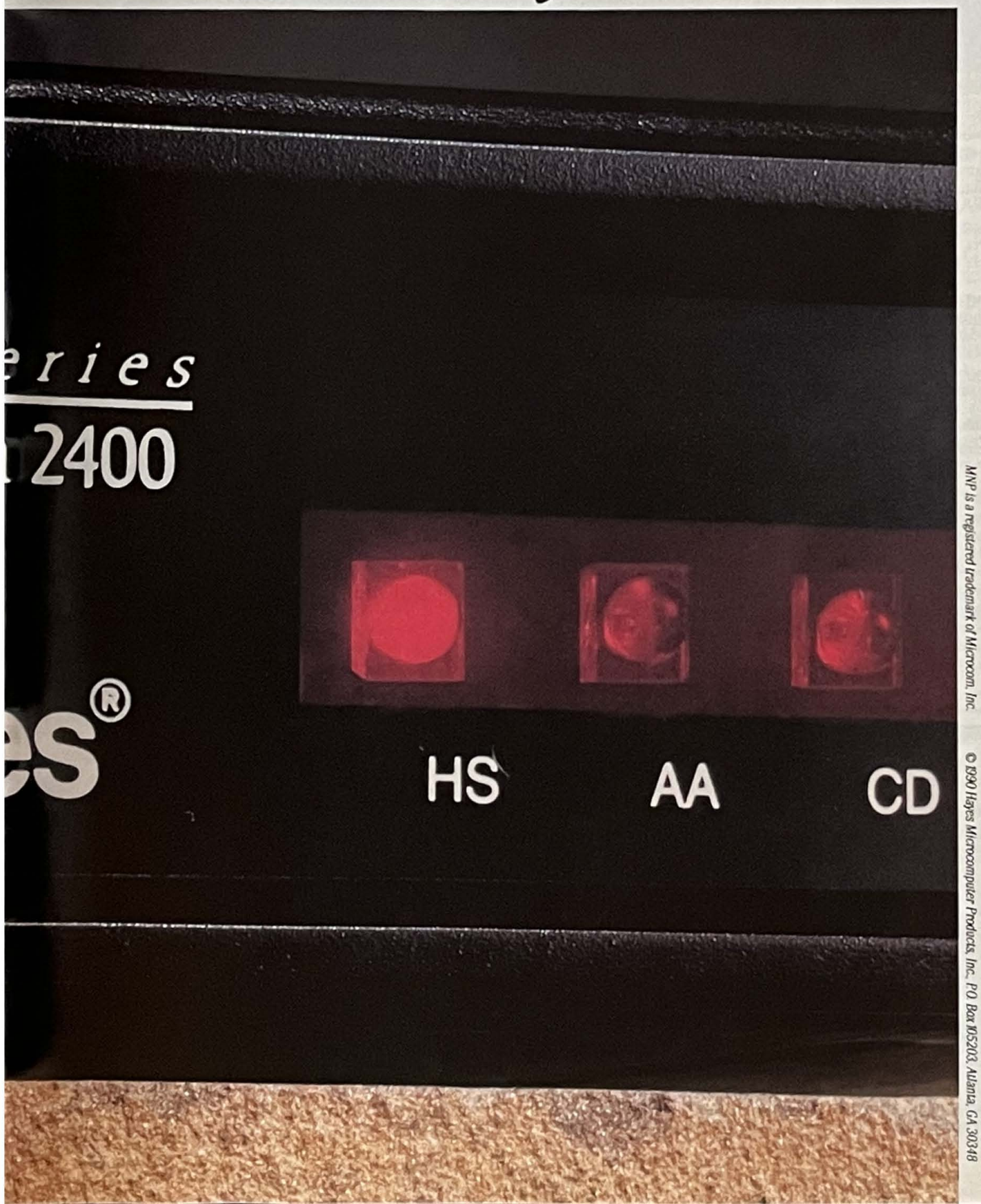


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REVIEWS

# RagTime: The Cuisinart of Mac software?

## *New version adds 24-bit color support*

By Clay Andres

It slices, it chops, it shreds ... RagTime combines page layout, word processing and spreadsheets, and the new version, RagTime 3, adds charting capabilities and support for 24-bit color. It's a formidable combination of features, and the program uses them synergistically to create a whole greater than the sum of its parts.

With the exception of Microsoft Works, which appeals primarily to novice users, multifunction Mac programs in general have been a failure in the United States. Early versions of RagTime were dismally marketed in the United States, but it has become a best-selling Mac product in Europe. It's used by large multinational corporations to design and process their forms and by executives who find working with a single program more efficient than learning several applications. Newly founded RagTime USA is trying to change the program's U.S. image and convince skeptical buyers that it can do everything it claims.

**Page layout.** Of RagTime's three united applications, page layout is the foundation upon which the others are built. The placement of elements can be precisely specified (to a tenth of a point), and even though RagTime doesn't have all the tools of Letraset's DesignStudio or QuarkXPress, its basic layout tool, the frame, is exceptionally versatile.

There are four frame types: word processing, spreadsheet, chart and picture. All frames are rectangular (a limitation), but they can be sized, overlapped, layered or made transparent as easily as objects in any drawing program. All text, numbers, charts and pictures are created and edited inside the frames,

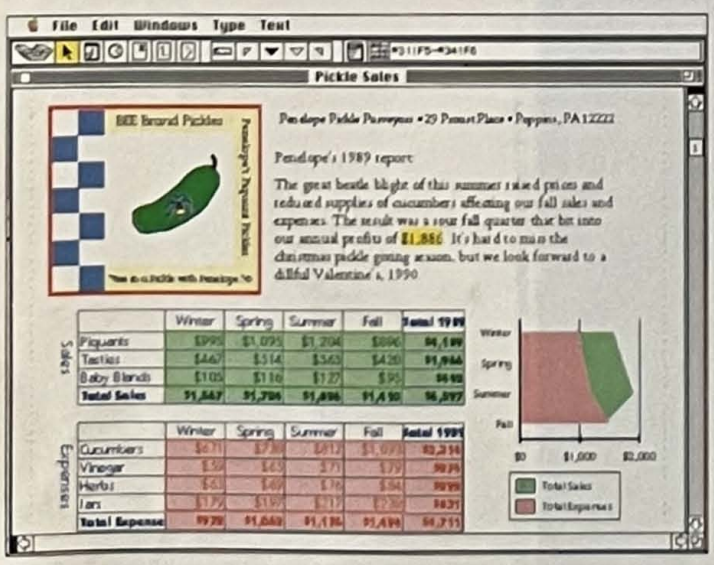
*See RagTime, Page 52*

### RagTime 3

**RagTime USA**
List price: $599; upgrades: $150

✚ A powerful combination of word processing, spreadsheet, page-layout and charting modules with 24-bit color support; uniquely well-suited to the presentation of numbers and forms design; multilingual capabilities.

➖ Word processor weakened by poor ruler design; spreadsheet slower than the competition; page layout needs rulers and guides; no drawing-tools palette to tie the package together.


File Edit Windows Type Text
Pickle Sales
BEE Brand Pickles
Penelope's Pickle Preserves • 29 Preserve Place • Peppers, PA 12222
Penelope's 1989 report
The great beetle blight of this summer raised prices and reduced supplies of cucumbers affecting our fall sales and expenses. The result was a sour fall quarter that bit into our annual profits of $1,856. It's hard to miss the christmas pickle gifting season, but we look forward to a skilful Valentine's, 1990
Sales
Winter Spring Summer Fall Total 1989
Piquants $995 $1,095 $1,204 $886 $4,189
Tastics $467 $514 $565 $420 $1,966
Baby Blands $105 $116 $127 $95 $443
Total Sales $1,567 $1,726 $1,896 $1,401 $6,597
Expenses
Winter Spring Summer Fall Total 1989
Cucumbers $671 $738 $812 $1,073 $3,294
Vinegar $56 $62 $71 $79 $269
Herbs $63 $69 $76 $84 $291
Jars $179 $196 $217 $288 $881
Total Expense $970 $1,065 $1,176 $1,524 $4,735
Winter
Spring
Summer
Fall
$0
$1,000
$2,000
Total Sales
Total Expenses

**All of Ragtime's four frame types were used to create this document. The picture of the bee in the pickle was imported; the highlighted number in the word processing frame was calculated automatically from the spreadsheets; the graph is a combination of numbers from the spreadsheets.**

**Reviews in Brief:** SEARCH ENGINES • OMNIPAGE ADD-ONS

### HyperKRS, HyperSearch

Beefing up HyperCard's speed and flexibility in locating text has become a minor industry. Among the tools available for developers are utilities that let HyperCard get at information stored in Omnis V files and information stored in separate files (as in HyperHIT and HyBase, reviewed in MacWEEK, Feb. 20). Two more products add power to HyperCard by indexing text stored in HyperCard fields. These two products, HyperKRS from KnowledgeSet Corp. and HyperSearch from Discovery Systems, basically work in the same way but have different focuses.

In HyperCard, text is stored in fields. These fields can be part of either the background — in which case the field is visible on all cards sharing that background — or can be specific to a single card. Normally, you use HyperCard's Find command to search for text in a stack. The Find command is fairly fast and flexible but bogs down seriously on large stacks. No separate index is kept for the words in the stack.

Described simply, both HyperSearch and HyperKRS work by building a separate file that contains an index to all the words in a stack. For each word, the index lists all the cards that contain that word. When you use the software to query the index, it reports back to you a list of all the cards on which that word appears. Scanning this index is faster than scanning the cards in a stack, which is essentially what HyperCard's Find does.

Both these packages are very fast at returning lists of cards on which words appear, and both are orders of magnitude faster than HyperCard. Each performs the essential tasks with fair ease; the packaged interfaces are close to the same, and about the same amount of HyperTalk programming expertise is required for both. However, they are not identical, and the differences are sometimes significant. The differences in the two packages are related to the uses for which the products are planned. HyperKRS is primarily designed to be used on stacks that reside on compact discs, while HyperSearch, while it is useful for CD-ROMs, is even better in cases where the text in the stack is often changing.

**The indexing process.** Before you query an index, you must prepare it. Indexing with the two packages is about the same, using the interfaces provided or using the supplied external commands from your own scripts. In general, we found HyperSearch to be the slower program when it comes to preparing

*See Reviews in Brief, Page 53*

# New utilities save files automatically

## *Supplement regular backup programs*

By Loftus E. Becker Jr.

Backing up a hard disk is like brushing your teeth — an unpleasant daily chore that can be skipped only at the risk of extreme pain. For hard disk owners, the perfect solution would be a fully transparent, automatic, background backup of the entire hard disk.

We have yet to attain that perfection, but several new utilities designed to supplement regular backup programs will save copies of important files automatically. Shadow 1.23 from Natural Intelligence Inc. backs up files from a user-defined list — and, optionally, all open files — at a specified interval. Backmatic 1.01 from Magic Software Inc. runs at shutdown to provide the equivalent of an incremental backup. And AutoBack 1.31 from Soft Trends keeps a constant copy of your data files on a second, mounted hard disk.

**Shadow 1.23.** Shadow is a desk accessory that will automatically save copies of up to 90 selected files. Copies of files can be saved to any Finder-mountable volume, including removable hard disks but excluding most tape drives. You can save all the files in the same place or set different locations for each copy. If you like, Shadow will check regularly for additional open files and ask if you want them added to the current backup list. You also can set it to issue a Save command periodically to the program you are running.

Only one list can be active at any time, although you can save multiple lists to disk and invoke them at will. Shadow won't split a file across disks, so if you're using floppies you can't back up anything larger than 1.4 Mbytes.

Once installed, Shadow has to be configured. As shipped, Shadow will automatically back up files and check for open files to be added to the list every five minutes. It also will issue a Save command once a minute. Any of these options can be changed through a simple dialog.

In our tests, operation was seamless and for the most part transparent. On shorter files, the automatic backups were barely noticeable (we timed Shadow at about half the speed of the Finder's Duplicate command). On large files the delay can be annoying; we wouldn't recommend it for saving monsters. If the destination disk is missing at backup time, the program politely prompts you to find it or pick a new destination.

Shadow has to be open to work. Unless you're running MultiFinder, which can automatically open desk accessories at start-up, you'll either have to remember to invoke it each time you change applications or find some way to automate the process, such as the old, but still functional, freeware Startup document (INIT) Immortality, available from on-line services and user groups. And you'll have to keep Shadow open constantly, which was a minor annoyance that stopped troubling us after a week of use.

There were a few small anomalies. The dialog asking if we wanted to add new open files interfered with automated telecommunication sessions unless we responded

*See Auto backup, Page 56*

### Shadow 1.23

**Natural Intelligence Inc.**
List price: $49.95

✚ Easy and reliable operation.

➖ Desk accessory must be kept open to operate; tries to back up Desktop Manager files.

### Backmatic 1.01

**Magic Software Inc.**
List price: $99.95

✚ Excellent inclusion/exclusion capabilities; operates automatically at shutdown.

➖ Entire disk must be scanned before each backup.

### AutoBack 1.31

**Soft Trends**
List price: $99

✚ Keeps fully transparent, real-time copies of data files.

➖ Awkward and limited exclusion options; doesn't work with floppies.

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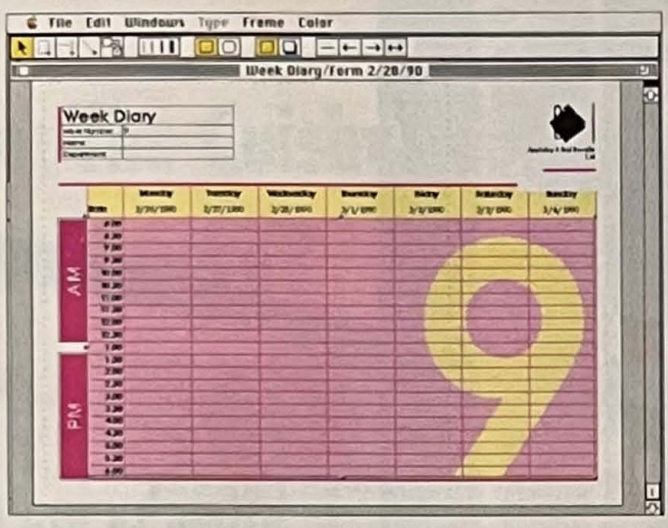


When you enter the number of the week, this document automatically updates the large background number and calculates the dates across the top of the appointment book.

## RagTime

*From Page 50*

which are manipulated on the pages to create the layout.

Frames are a powerful device because all functions exist on top of the page and are immediately available. By contrast, Works' modules create separate documents and have to be merged through the Clipboard into the word processor.

While it's easy to manipulate frames, it would be easier still to design layouts if there were rulers and guidelines like those found in most drawing and layout programs. Frame size and position can be specified, but there is no way to try several placements to see how they look without closing and reopening the dialog box.

**Word processing.** The default frame type is text. Draw a frame on the page, click in it and start typing. RagTime has no style menus, footnotes, glossaries, outlining or built-in indexing — the tools Mac power users have come to expect from word processing programs. But RagTime can hyphenate in 14 languages and spell check in eight. RagTime USA doesn't have all the dictionaries yet (they're available in Europe) but expects to ship them in April.

There is complete typographic control of the text, including leading and kerning, and you can change the color and shading of the text and background. It's also easy to set text to flow around graphics, or to change the order and pagination of text frames. But RagTime's rulers are not as convenient. They fit in with the text, which makes them too small, but they are still big enough to obscure the first line of every paragraph with a format change.

RagTime gives you access to all the computational power of the spreadsheet from within the word processor. Click on the Abacus icon and enter any formula, including built-in functions. The result will be placed in the text. You can refer to cells in spreadsheet frames, and they will automatically update when the referent changes.

**The spreadsheet.** RagTime 3's spreadsheet has everything you'd expect from a good stand-alone spreadsheet — formulas, functions, iteration, import/export and sorting. It's big — 16,000 rows by 235 columns — and you can create multiple spreadsheets in a single document, as well as links to other documents. Even though it is 10 to 50 times faster than RagTime 2, it's still not as fast as Excel, Full Impact or Wingz.

There are a mail-merge function and lookup tables but no formal database function. There is no macro capability, but you can write custom functions and attach them to any cell with the Button function. RagTime is missing a few conveniences, like a fill command for repeated series and copy down/across commands, and there's no cell reference displayed while scrolling, which makes it difficult to navigate.

But just as the word processor gets added functionality from its calculation capabilities, so the spreadsheet gains from its formatting capabilities. You can put whole paragraphs into a single cell and edit the contents directly rather than use the Edit bar on top. You can choose background and foreground colors and shades from the complete 24-bit palette. RagTime 3 also has added custom number formats that are as powerful as Excel's and easier to use.

For the combined analysis and presentation of numbers, RagTime is uniquely powerful. You can work with numbers as easily as with other spreadsheets, and you can present them as elegantly as with any page-layout program; this combination makes RagTime especially well-suited for designing and filling out forms. You can even save RagTime documents as forms and "tear off" a copy each time you need to fill one out.

**Graphs and charts.** Graphs and charts are a new mode and frame type for RagTime. They allow you to make presentation-quality plots of your data right next to the actual numbers. You can't just click on the Icon bar and add a graph to the spreadsheet the way you would in Full Impact, but you don't have to go to the other extreme and create a new document as you would in Excel.

You define a graph frame and then copy a selection from spreadsheet to graph. The graph is dynamically linked to the numbers, so that changing the data changes the graph. RagTime has simplified the choice of graph types to category, x-y and pie, but allows so much customization that you can achieve all of Excel's 39 types and more.

You also can graph multiple series of the same type or build layers of transparent graph frames to create special, more complex

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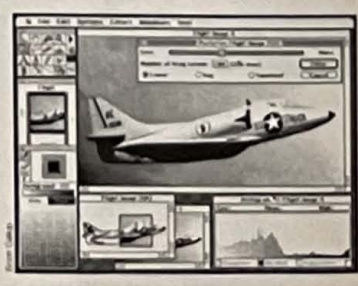

MicroFrontier Inc.
7650 Hickman Road
Des Moines, IA 50322

Requirements: Mac II, IIx, IIcx or IIci, 2 Mb RAM, gray-scale or color monitor, 8-bit or better video card. ©1990 MicroFrontier, Inc. "ImageStudio", "Digital Darkroom" & "PhotoPress" are trademarks of their respective holders.

charts that are impossible to duplicate in Excel. But RagTime has no drawing tools, so you cannot add arrows or special annotations as you can in Wingz or Full Impact.

Text, patterns and colors can be added and modified as easily as in other frames.

*RagTime combines professional-strength analytical and explanatory tools with the capability to present information in a graphically pleasing manner.*

Graph elements like axes, data points, tick marks and labels are customized easily. However, only some text elements can be rotated, and you cannot put text wherever you choose.

**Pictures: The whole view.** With RagTime's picture frames, you can import graphics in all the standard formats or directly read in images from a scanner. Like all other RagTime frames, they can be anywhere or any size, transparent or opaque, set up in layers, or placed for text runaround.

Images can be scaled to any size, manually or by a percentage; cropped; linked to the frame; and linked to the original picture file. RagTime can display line art, halftones, grayscale and 24-bit color images.

RagTime 3 comes with a thorough users guide and a tutorial manual, both written in England. Don't be put off by spellings such as "colour"; the guides are readable, and the examples are clear and helpful. An Americanized manual will be shipped later this year.

**Conclusions.** RagTime combines professional-strength analytical and explanatory tools with the capability to present information in a graphically pleasing manner. It's just what every executive needs — the ability to collect, digest and convey diverse information with a single program. The developers would have users doing all their word processing, spreadsheets and page layout in RagTime. And you almost can.

All of RagTime's modes, except word processing, have sufficient power to stand alone. For typing, the clumsy rulers get in the way. For tables and forms — anything with formatted numbers, columnar text, or mixed numbers and text — RagTime is much easier to use than any word processor.

For the dedicated desktop publisher, RagTime doesn't have the ultra-fine typographic controls of a program like QuarkXPress. For technical number crunching, RagTime lacks the throughput of Excel and programs of its ilk. But for the diverse correspondence, numerical and presentation needs of most Macintosh users, RagTime is a powerhouse. It could become the Cuisinart of Macintosh software.

RagTime USA is located at 400 Walnut St., Suite 501, Redwood City, Calif. 94063; (415) 780-1800. □

## Reviews in Brief

*From Page 50*

the index. However, this deficiency is partially offset by HyperSearch's ability to incrementally update an index. That is, if your stack has been changed, you can add just the new cards to the index or delete existing ones from it. HyperKRS does not permit this. The entire index must be updated at once. This isn't much of a problem when you are creating an unchanging index for a stack to be distributed on CD-ROM but does make the product close to unusable for more dynamic situations.

A major difference between the two packages also lies in the amount of information stored for each word indexed. HyperSearch stores only the name of the stack the card is in, and the ID number of the card containing a specified word. HyperKRS stores the name of the stack, the card number, the field number, the paragraph number and the word number of each word in the index. There are several ramifications to these differences.

First, you should note that because HyperKRS stores the card number, as opposed to its ID number, such actions as sorting a stack or adding or deleting cards totally invalidate the index. For delivery of the indexed stack to others on a locked device (such as CD-ROM) this isn't a problem. However, it does mean that you must take care not to invalidate the index when developing a stack or make sure you reindex it afterward.

On the other hand, since HyperKRS stores a lot more information about each word in the index, you can generate more-complex queries, such as finding words in proximity to one another. Such things as finding all instances of the word "Macintosh" in the same paragraph as the word "SCSI" are easily handled by HyperKRS but not by HyperSearch.

**Two unique files.** A point in favor of HyperSearch is its optional use of two unique files. The Stoplist file is a list of words that should not be indexed. It can make for faster indexing and searching through the files since it is unlikely that you will ever search for words such as "the," "of" or "and." The Keyword list is the opposite of the Stoplist. Only words found in this list will be indexed.

In the final analysis, our recommendation is as follows: If you are developing the stack exclusively for static situations (where data in the stack will not be changed), as on a CD-ROM, and where you need to use complex word-proximity searches, you should use the $195 HyperKRS. On the other hand, if your stack is a dynamic bunch of text, HyperSearch, at $119.95, is the preferable tool, since its index is changeable under script control. Before choosing one of these packages, you also should consult with their publishers; if you plan to distribute these tools to others, licensing fees can vary and will be a factor in your decision.

Discovery Systems is located at 7001 Discovery Blvd., Dublin, Ohio 43017; (614) 761-2000.

KnowledgeSet Corp. is located at 888 Villa

*See Reviews in Brief, next page*


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## Reviews in Brief

*From previous page*

St., Suite 500, Mountain View, Calif. 94041; (415) 968-9888. — *By Steve Michel*

### OmniPage 2.1, OmniDraft, OmniProof

Following up on the success of OmniPage, Caere Corp.'s optical character recognition (OCR) application, the company has announced four new Macintosh products. Two, OmniSpell and OmniDraft, are add-on modules for OmniPage. Surprisingly, the other two, OmniTrace and OmniProof, are not specifically designed for OCR work but can be used to process documents or scanned images. OmniProof and OmniDraft were released last month along with OmniPage 2.1, a modest upgrade primarily issued to accommodate the new add-ons.

**OmniPage 2.1.** The latest upgrade to OmniPage features support for more scanners, the streamlining of some commands, the ability to read compressed TIFF files, and some fine-tuning of the recognition engine.

The File menu now includes a Revert to Saved option. And a Recognize button appears in the Open dialog, allowing you to select a TIFF file on disk and proceed to text recognition directly.

A new Check Errors feature opens a window in which you can review and edit the characters OmniPage has marked as unrecognizable. This is the same window that OmniSpell will use, when it is released, to spell check documents.

The manual lists a dozen companies whose scanners OmniPage now supports. The list includes pretty much all Mac-compatible scanners, with the exception of the Xerox Datacopy. OmniPage is still priced at $795, and the Version 2.1 upgrade is free to registered owners of Version 2.0 or $150 for owners of earlier versions.

**OmniDraft.** The only outward sign you'll notice after you have installed OmniDraft on your hard disk is the new Dot Matrix button in the Text Settings dialog of OmniPage. This $100 add-on module "connects the dots" on scans of draft-mode dot-matrix printouts, making them more accessible for OCR translation. We noted OmniPage's difficulty in handling this type of printed document when we reviewed Version 2.0 (see MacWEEK, Oct. 3, 1989).

In our tests of OmniDraft, we found it improved the scanning speed and recognition rate on many dot-matrix pages that were previously unacceptably slow or error-ridden. We also found significant improvements when we used the software that came with our scanner to finely tune the contrast settings. We are disappointed that Caere continues to leave out expert tools such as a zoom preview of a scanned page or a flexible contrast control.

OmniDraft does make recognition of draft-mode dot-matrix pages better, but we think that users needing this capability will be disappointed that it is being offered as an add-on module rather than as part of the main program.

**OmniProof.** DocuComp from Advanced Software Inc. of Sunnyvale, Calif., pioneered the category of sophisticated text-comparison software on the Mac (see MacWEEK, Oct. 3, 1989). OmniProof is a slightly modified version of DocuComp sold by Caere for $150. The software compares two documents and marks all changes, deletions, insertions, replacements, moved text and changes within moved text.

In addition to plain text files, OmniProof can open documents created in Microsoft Word, Word Perfect, WriteNow and MacWrite. In combination with OmniPage and a scanner, OmniProof can compare printed documents. There is no limit to the document size OmniProof can handle, but extra RAM makes processing of large documents faster.

When OmniProof is running, the two documents being compared are visible in the halves of a split screen. Both halves scroll together, and there is a handy command to jump to the next detected difference. All differences between the documents are marked on screen, with underline, bold and italic styles representing the various kinds of alterations. The file can be saved with changes marked, with line numbers added, with a summary of changes made and with a detailed list of differences.

Changes in formatting and spacing are not noticed by OmniProof. Reprints of the documents will not show headers and footers, except in a list at the end of the document. Punctuation changes are noticed and marked with the nearest word.

OmniProof is not for everyone, yet those who have a need for it, such as lawyers and editors, will find it very useful and a real timesaver.

Caere Corp. is located at 100 Cooper Court, Los Gatos, Calif. 95030; (408) 395-7000; (800) 535-7226. — *By Scott Beamer*

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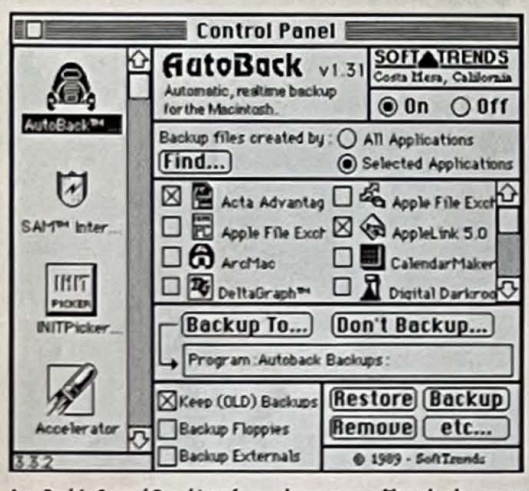
## Auto backup

*From Page 50*

to it. And if you open, modify and close a file during Shadow's interval for checking open files, the file won't get backed up. If you're running Desktop Manager, Shadow will regularly ask if you want to add its two open files, Desktop DB and Desktop DF, to your set. Even if you answer "No," Shadow will remember your refusal only until your next start-up. In the long run, we found it more convenient to permit the useless backup of those files than to suffer the question every session.

Shadow is a reliable and useful program. Even though we back up our hard disks daily, it's easy for a crash to destroy up to a day's work. With Shadow running, we never had to worry about losing more than a few minutes. Its capability to save different files to different locations also makes it a convenient way to move files between home and office machines. With minimal effort, Shadow can provide valuable, low-cost insurance against hard disk crashes.




**AutoBack's Control Panel interface, where you can filter the documents to be backed up and control other backup settings.**

**Backmatic 1.01.** By contrast, Backmatic is a combined Control Panel device/INIT primarily designed as a substitute for daily incremental backups. As shipped, it will automatically search your hard disk at shutdown for files changed since the last time it ran and then save them to floppies. Backmatic also can be invoked manually through the Control Panel. And if you prefer, you can set Backmatic to save files to a folder on a hard disk or file server.

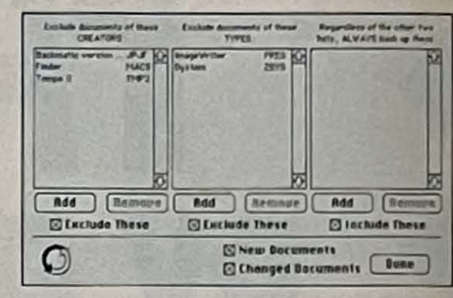
Backmatic gives you extensive control over the files to be backed up, with a well-designed filtering scheme. You can exclude files based on their file type (all INITs, for example, or all Word Temp files), their creator (all HyperCard files, for example), the folder in which they reside or the disk they're on. You can list specific files that should always be backed up, whether or not they've been changed. Backmatic will back up to a series of floppies but won't split large files across disks.

The backup process takes a while since Backmatic first scans all hard disks not excluded. This wasn't annoying at shutdown but discouraged us from making regular backups during the working day. The actual backup was relatively fast to a hard disk (more than half a megabyte a minute) and reasonably speedy to floppies.

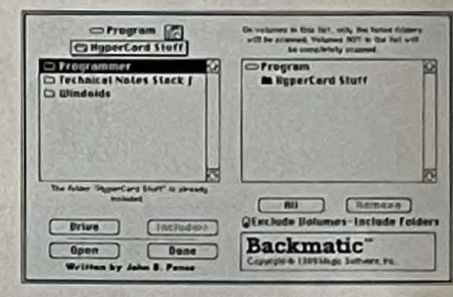
In operation, Backmatic performed reliably; our only problems were small ones. The program doesn't maintain your folder structure, a minor hassle if there are lots of files. On the other hand, since each backup goes in a new folder, it can provide a convenient archive of earlier versions. It sometimes refused to make an immediate backup because of a RAM shortage. And Backmatic occasionally reported that a file was in an excluded folder when it wasn't, but the file backed up fine.

We looked at a late developmental copy of Version 1.1, which will be sent free to all registered users. It speeds up the backup process substantially and splits large files across disks. It also allows timed backups and adds features for networks.

The current version of Backmatic is most valuable for people who want to automate daily incremental backups. It's too slow and cumbersome to use repeatedly during the day. Version 1.1 will speed the process and can be set to back up regularly, but since it backs up everything at once, each backup will cause a noticeable interruption of your work. Backmatic works well for a few backups a day, but if you must be up to the minute, we'd recommend one of the other options.




**Backmatic lets you include and exclude files to be backed up based on type and creator ...**




**... or you can create groups of specific folders to be checked at shutdown for changed files.**

**AutoBack 1.31.** AutoBack is an INIT designed for those who want an always-current copy of their data files on a second hard disk. It won't back up to most tape drives or to floppies, so you need lots of extra hard disk space to run it. But if the space is available, it will back up every file as it is changed, automatically and for the most part unobtrusively.

*See Auto backup, Page 58*

eXodus

The X Window System server that frees your Macs to talk to any computer.

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## Auto backup

*From Page 56*

As shipped, AutoBack is set to back up everything on your hard disk or disks, except for applications and most of the files likely to find their way into your System folder (INITs, cdevs and so forth). Thus, if you don't change the settings, it will make a complete copy of your data files the first time you use it. AutoBack includes built-in utilities to restore files and to delete old files from your backup set; these are convenient though not indispensable, since the same tasks could be done manually with little extra trouble.

If you want to copy only a subset of files, AutoBack's filtering options are limited. You can choose to include only files created by particular applications or to exclude files on a folder-by-folder basis. However, you can't include, for example, only three of five Microsoft Word documents in one folder; exclude individual files, except by putting them in an excluded folder; or easily exclude an entire hard disk.

**Shadow's desk-accessory window, showing the list of files to be backed up and the time remaining until backup.**

Once configured, AutoBack generally ran smoothly. In more than a month of testing it never failed to copy a file that was being saved. However, files have to be saved by an application or DA to be backed up; AutoBack doesn't copy files duplicated in the Finder.

On small files we didn't notice the additional time required to make a copy. For larger files, a dialog box appears, giving you the option to cancel the copy if you're in a hurry. You can set the file size that triggers this alert. As files approached 500 Kbytes, the slowdown was occasionally annoying. We wouldn't recommend using AutoBack with large databases or HyperCard stacks, which get modified with every use.

Configuration is no problem if you're happy to back up everything, but if you aren't, the inclusion and exclusion process is poorly designed and slow. Folders are excluded through a cumbersome dialog that places a 0-Kbyte file called No Backups in the folder to be excluded. Although these files serve as useful visual reminders, they add to desktop clutter. AutoBack can take 15 minutes or more to configure, much longer than the other two utilities reviewed.

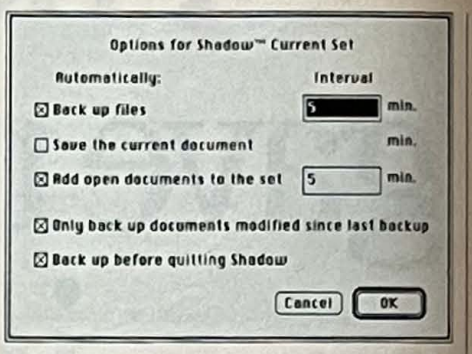
Configuration, however annoying, is usually a one-time thing. Other problems were more irritating. HyperCard files are saved with the file name converted to lower case, and when "unstuffing" files compressed with Aladdin Systems Inc.'s StuffIt to a No Backups folder, the process slows to a crawl. If the hard disk to which you're saving files mounts late in the start-up process, AutoBack may tell you the disk is unavailable, even though it mounts seconds later. And AutoBack sometimes triggered the protection mechanisms of Symantec AntiVirus for Macintosh's advanced mode.

We also experienced occasional glitches. AutoBack sometimes refused to make an initial backup, although subsequently changed files were backed up fine. Rebooting and repeating the backup fixed the problem. Once, it lost track of a backup folder and presented us with a confusing error message. Resetting the location from the Control Panel cleared up this one. Occasionally the cdev insisted that AutoBack wasn't installed even when it was, and thus wouldn't let us change parameters. And AutoBack's dialogs overwrote our color desktop with a black rectangle.

We wouldn't recommend AutoBack in its present form to naive users. But if you're experienced, want an up-to-the-minute copy of a hard disk and have the disk space available, AutoBack is probably the program of choice.

**Conclusions.** These programs aren't for everyone. None will substitute for regularly running a good backup program. But each of them can be a good supplement.

If you can't remember to do a daily backup, or want to archive your changed files, Backmatic is a good choice. If you want a hundred or more files backed up whenever they're modified, consider AutoBack. If you simply want to keep copies of the files you're working on, or back up any reasonably short list of files, Shadow is probably the program for you. Finally, if you want to move your work files back and forth between two machines, either Backmatic or Shadow will do that well.



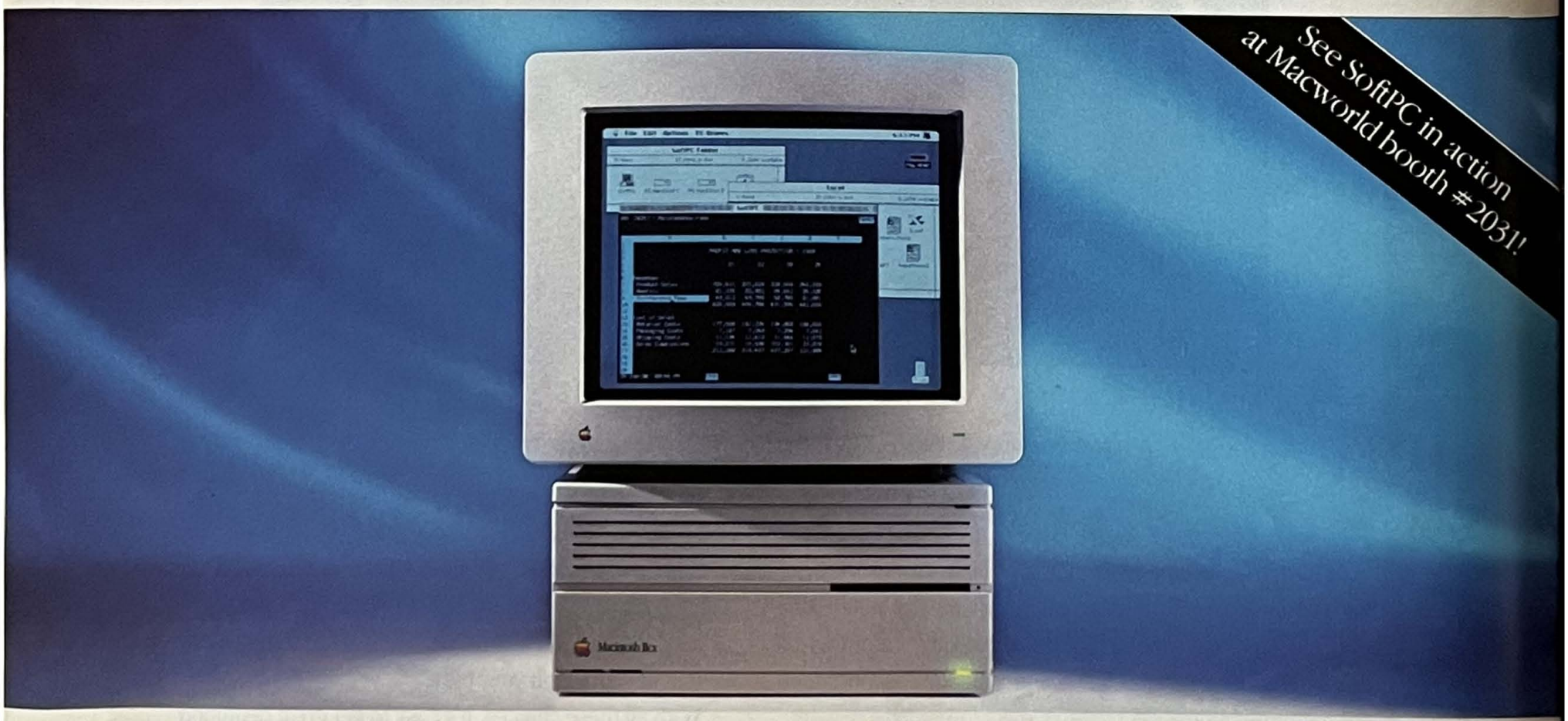

**Shadow's Options dialog lets you choose procedures and intervals for backing up open and changed files.**

Natural Intelligence Inc. is located at 86 Richdale Ave., Cambridge, Mass. 02140; (617) 266-7858; (800) 999-4649.

Magic Software Inc. is located at 2206 Franklin St., Bellevue, Neb. 68005; (402) 291-0670; (800) 342-6243.

Soft Trends is located at 2243 Pacific Ave., Suite B101, Costa Mesa, Calif. 92627; (714) 650-2158. □

*Loftus E. Becker Jr. teaches law at the University of Connecticut in Hartford, programs small utilities and writes frequently on Macintosh subjects.*

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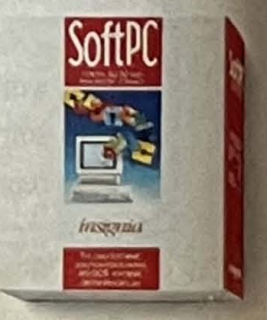

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REVIEWS

# Tycho spent his life making tables so you don't have to

*Individual cells are easily formatted*

**Tycho**

**Macreations**
List price: $149.95

+ Good user interface and program design; easy to learn and use; faster table creation and editing than with a spreadsheet or word processor.

− Not enough features; it's a one-dimensional application that must be used with other programs to create the data or add graphic touches for presentations.

**By Clay Andres**

Tycho's sole application is making tables, the grist of financial and scientific mills. While Macreations' new program can't crunch numbers or merge files for form letters, it makes formatting and organizing tabular data for presentation much easier than existing tools.

The concept of an integrated table is not built into spreadsheet and word processing programs. Formatting and editing tables in Microsoft Excel is tedious and time-consuming, and Microsoft Word's table-creation feature is limited. Page-layout programs have often been used in combination with word processors to develop complex tables, but this process is also painstaking.

To facilitate moving data between separate programs, Tycho supports several import and export formats. You can dump your numbers into Tycho from a spreadsheet or database and create the table, then export the table to a drawing program or page-layout program for final presentation.

Tycho is for serious table makers. It is named for Tycho Brahe, the 16th-century Danish astronomer who spent his life tabulating star positions.

**All cells are not created equal.** When you open a Tycho document, it looks like a spreadsheet: rows and columns of cells labeled with numbers. But not all cells in Tycho are equivalent. The first row and column (labeled RH and CH) are for headers, and across the bottom of the table is a cell for notes. You also can create group headers or add a title across the top. This hierarchy of cells is the heart of Tycho. It imposes an order on the table that a general-purpose spreadsheet can't bestow.

Cell formatting is the most thoroughly developed side of Tycho. Each cell is essentially a word processing area. There is no special editing bar like those found in spreadsheets. Instead you edit directly in the cell. Cells can be formatted individually or in hierarchical groups.

Global settings can be defined for headers, titles, notes or data cells, or you can format each cell individually. Settings include not only font, size and style, but also the horizontal and vertical alignment of text within a cell as well as background and foreground shading. However, you are limited to using the font sizes in the menu. There is no way to specify all the font sizes you might want.

The table itself is formatted independently of the data. There is a feature that allows you to define alternating patterns of shaded rows or columns. Changing the number or order of rows and columns will not affect the shading order. Try doing that in a spreadsheet.

Cell sizes can be fixed or set to grow vertically or horizontally to fit the text. A long entry will cause the row or column to resize so that all the text can be seen. Try doing that in a word processor.

Because Tycho's cells are like little word processors, they don't necessarily behave the way you'd expect spreadsheet cells to behave. For instance, you can't just pick up a cell and copy or move it. You have to make sure that the contents are selected.

All the format commands can be saved in special Style documents. If you have a corporate format or a repeated-form style, these documents can save you much setup time, and since they are text documents, they also can be printed. Version 1.1 of Tycho, soon to be released, also will be able to save template documents that can be used without changing the original.

Tycho has a unique dingbat feature that allows you to choose special characters such as arrows and check marks from a dingbat palette. It's easy and convenient to use, but you are limited to Tycho's dingbat font. Future versions of the program will allow you to choose your own dingbat font, such as Zapf Dingbats, which is built into many laser printers.

**Hidden features.** Several features in Tycho cannot be invoked from the menu bar. Instead, you must remember their keyboard commands. For instance, automatic footnotes can be added only by typing Option-Command-F. This is a useful and potentially powerful feature; we wish it weren't hidden. Possibly Macreations did so because it is not yet fully realized.

Footnote numbers increase automatically, but if you move cells around, you have to use the Reorder Footnotes command. If you copy a cell with a footnote attached, you get a new footnote with a new number instead of getting the same one. However, it is possible to enter and number footnotes manually. Macreations is planning to rewrite the footnoting part of the program in a future version of Tycho.

Another feature slated for improvement is the Sort command. Currently, you can sort only on a single field and there is no way to specify a Sort order. There is also no way to sort numeric data, and no way to sort by groups. This is especially unfortunate since grouping is one of Tycho's biggest advantages over spreadsheets.

**Performance.** Tycho's functionality is limited by its relatively short list of features (or long list of missing features) and poor performance. The program does a lot of tedious screen redrawing, which should be at least partially fixed in the next version. There are no graphics tools. You can't even draw a line or insert a picture. There is also no color support, no way to rotate text for column headings and no way to add up numbers.

One might wonder if Tycho isn't going to meet the same fate as TableTools, an earlier program from now-defunct Mansfield Systems Inc. TableTools was also strictly a table-making program. It had most of the features that Tycho is missing (except color). It also had a cumbersome user interface that required you to keep track of what mode the program was running in to know which features were available for use.

Macreations' goals for the first version of Tycho seem to be more modest than Mansfield Systems' were for TableTools. Rather than cram in features at the start, it has written a strong core application to which features can be added.

**Technical support.** Macreations is a small company eager to support its product. In fact, every time we called for technical help, the president answered the phone. The manual also reflects the company's zeal for the program.

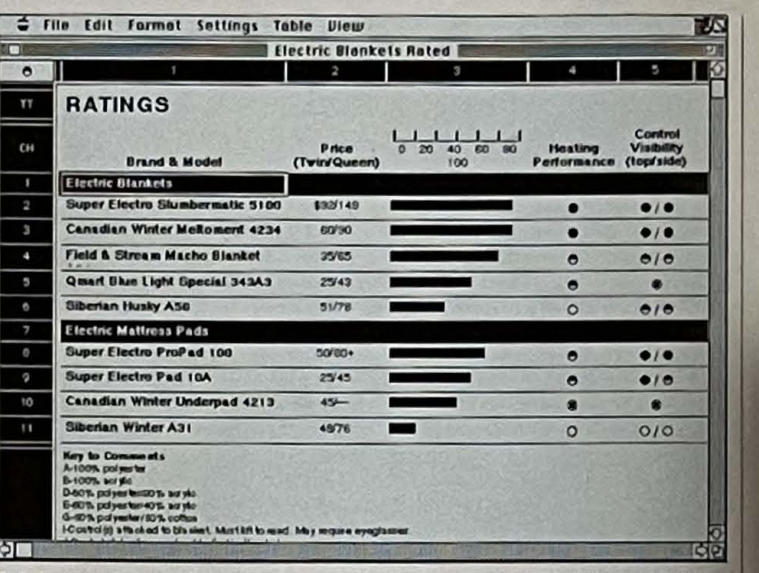
*Macreations has written a strong core application to which features can be added.*

**Conclusions.** Don't rush out and buy Tycho just for occasional table-making needs. You probably already own a program that can handle that. But if you have reached the formatting limits of your spreadsheet or the tabular limits of your word processor, Tycho will probably make your work much easier.

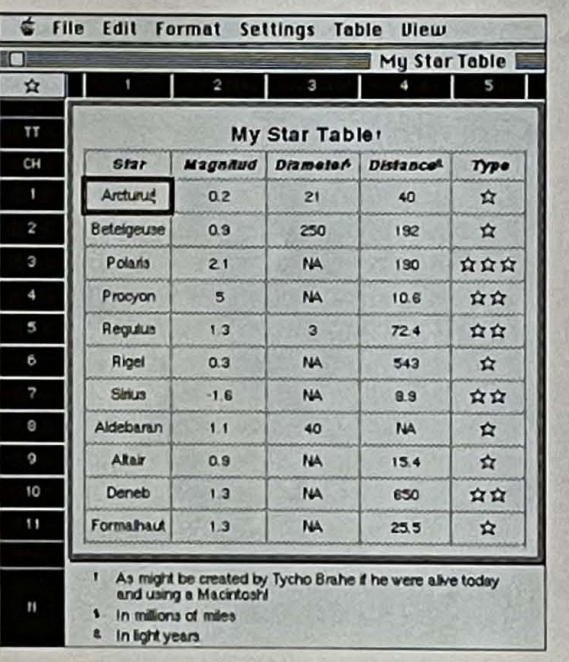
What Tycho does (straightforward formatting and organizing of tables) it does well. What it lacks (simple graphic and numerical tools) Macreations plans to add.

If you buy Tycho now, you shouldn't be left behind by the cost of future upgrades. Version 1.1 with added capabilities for pagination will be free to all users, and subsequent major upgrades will be available for about the cost of materials.

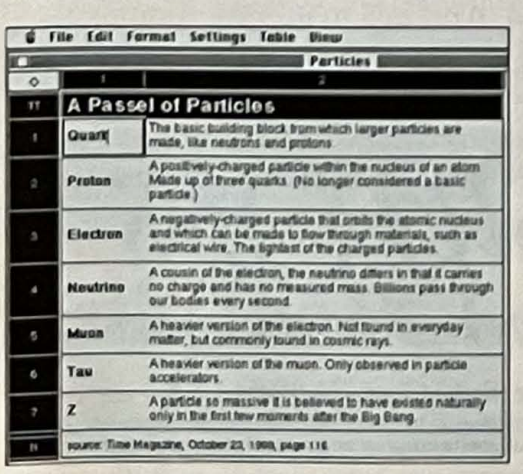
Macreations is located at 329 Horizon Way, Pacifica, Calif. 94044; (415) 359-7649. □




Tycho's unique dingbat palette makes creating this Consumer Reports-like table easy. The bar graphs are made from solid square dingbat characters.




Tycho is named for Tycho Brahe, the 16th-century Danish astronomer who spent his life tabulating star positions. This star-classification table uses centered headings, footnotes and the program's custom dingbats.


File Edit Format Settings Table View
Particles
A Passel of Particles
Quark
The basic building block from which larger particles are made, like neutrons and protons.
Proton
A positively-charged particle within the nucleus of an atom. Made up of three quarks. (No longer considered a basic particle.)
Electron
A negatively-charged particle that orbits the atomic nucleus and which can be made to flow through materials, such as electrical wire. The lightest of the charged particles.
Neutrino
A cousin of the electron, the neutrino differs in that it carries no charge and has no measured mass. Billions pass through our bodies every second.
Muon
A heavier version of the electron. Not found in everyday matter, but commonly found in cosmic rays.
Tau
A heavier version of the muon. Only observed in particle accelerators.
Z
A particle so massive it is believed to have existed naturally only in the first few moments after the Big Bang.
source: Time Magazine, October 23, 1989, page 116

Extensive text-formatting capabilities allow vertical centering of headings and automatic word-wrap within cells.

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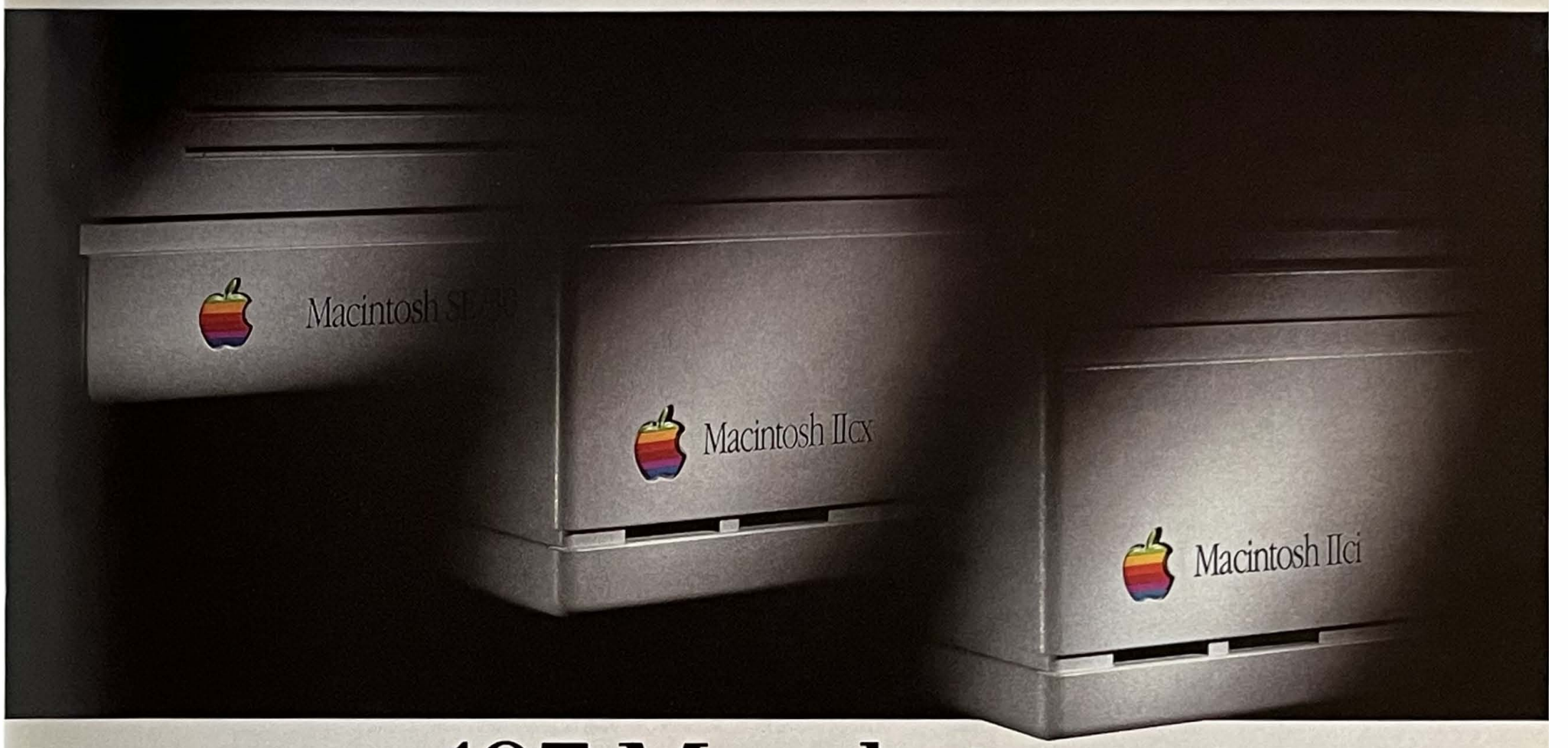


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MW-MS1

REVIEWS

# Origins: Low-cost, but solid modeler

## Origins 1.02

**Deltasoft Inc.**
List price: $595 (color), $495 (b/w)

+ Surface modeling, solid modeling and 2-D drafting all in one low-priced package; runs on a minimum Mac system (for both RAM and disk); supports 24-bit color; floating-point database; extensive on-line help.

− No DXF or IGES support; inflexible windows; no plotter support; no external database connections; single light source for rendering; no macros or programming language.

**By Phillip Robinson**

Solid modeling, which includes information about both the inside and outside of objects, is said to be the next step in CAD sophistication. It is a move up from 2-D drafting, 3-D drafting, wire-frame and surface modeling, and extends the reach of 3-D design and simulation. Where surface models show the appearance of a 3-D design, solid models become resources for information on the positions, interferences and mass properties of an object.

But because solid modeling demands complex calculations that tax both processor and graphics-display hardware, it has traditionally been the domain of workstations. Now Deltasoft Inc.'s Origins offers solid modeling on any Macintosh from a 512KE with a single floppy drive on up. That's far less hardware than most Mac CAD packages require. At $595 (or $495 for the black-and-white version), Origins is also cheaper than most Macintosh CAD packages.

But Origins isn't just a solid modeler. It also offers tools and commands for many 2-D and 3-D drafting assignments. There is a palette of 45 primitives and editing commands, most of them backed up by a dialog box with more specific settings, such as the number of nodes on the object. A status box lists the coordinate position, zoom scale, active-layer name and other such details.

However, although you can draw objects with standard click-and-drag mouse movements, you cannot select objects in the conventional Mac drawing manner. A Geometry Locator function with a long list of commands and dialog-box settings is used to place an object or operation at an intersection, midpoint, percentage point, vertex, center or other coordinate.

**Working with Origins.** Editing commands include Translate, Rotate, Chamfer, Fillet, Radial Duplication and, for 3-D work, Extrusion and Revolution. Cylinders, spheres, Bezier curves and sculptured surfaces are among the 3-D primitives included. There are layers, 78 fill and crosshatch patterns (including eight industry standards), unlimited zooming, locking, grouping, and keyboard or tablet input of coordinates, although the keyboard option is difficult to figure out. A floating-point database underlies all modeling work.

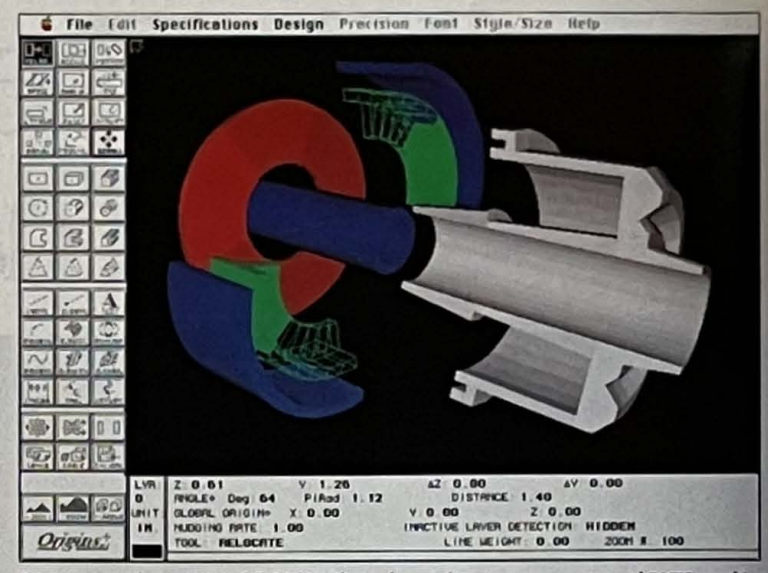
Text editing in Origins uses standard Mac text styles, fonts, sizes and processes. Automatic, associative dimensions are on tap for linear or radial work. Architectural and engineering units that conform to European and U.S. standards can be assigned to any drawing. A symbol library feature can organize and graphically display symbols that you create, though Origins doesn't come with a ready-to-use library. Origins' color capabilities go far beyond those of many CAD programs, which mostly support only eight-bit mode, giving 256 colors. Origins' 24-bit color capabilities mean it can work with the full 16.7 million colors that can be addressed by a Mac II-family machine. One would expect this from a program that boasts powerful rendering skills.

Origins has routines to format plotter output but no built-in plotter drivers. Rendered images are best saved as PICT2 files for screen display or color printing. Origins' Clipboard offers unique flexibility. You can set the projection axes for source and destination, and choose from Origins, PICT2 and plain-text formats.

On-line help is extensive; it even includes an engineering-measurement conversion chart and a drafting reference table. Unfortunately, the text is displayed in a nearly illegible font.

The default view scheme in Origins shows a single model from three different viewpoints, each view in its own window. (Origins can open more than one model at a time.) You also can choose to have a top, side or front view fill the entire display window although you cannot alter the size of the windows or their position on the Mac screen.

The 3-D view shows the model in perspective or orthographic projection and offers a palette for setting the speed and directions of model translations and rotations. This could lead to fly-by and walk-through tours, but those would be quite difficult to build without some macro or programming language. Hidden-line removal and rendering also come into play in the 3-D view. Shading is available as a vector or raster process and will automatically assign colors or, if colors aren't available, shaded fill patterns. But the only possible light source is the viewer's eye.

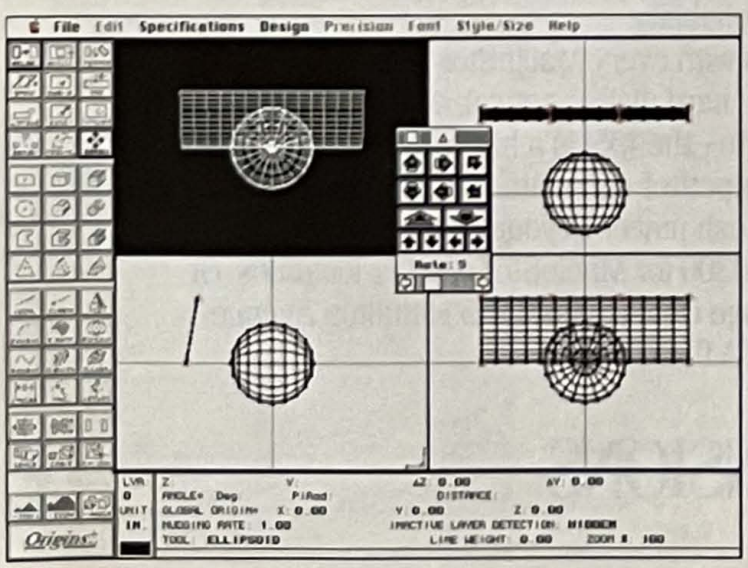



Origins can render models in full 24-bit color and save them in raster, vector and PICT2 graphics formats. PICT2 is the best format to use for screen display or color printing.

**Conclusions.** Origins has a long list of missing features. It lacks many of the subtle 2-D editing tools found in sophisticated CAD packages. It also lacks macros or a programming language, analysis tools or sophisticated selection filters, flexible and independent windows or views, database output, network support, and DXF (Drawing Interchange Format) or IGES (Initial Graphic Exchange Specification) support. While Origins does offer some impressive 3-D surface- and solid-modeling tools, it doesn't carry through with multiple light sources or other details of a full solid modeler. Nor does it have a tutorial to show how to use the 3-D features. Deltasoft plans to release a much more complex package later this year, called Origins Professional, that will include many of these missing features. The company refers to the current version as "Origins Novice."

In the meantime, for less than the price of many 2-D drafting packages, Origins Novice includes 2-D and 3-D drafting as well as 3-D surface and solid modeling. And with its floating-point database, the program is far more precise than conceptual 3-D modeling programs such as Swivel 3D and Super 3D.

Deltasoft Inc. can be reached at P.O. Box 55089, Tulsa, Okla. 74155; (918) 250-5594. □




Origins' 3-D Mode palette has controls for rotating and translating the 3-D model in coordinate space, along with a rate control for dynamic motion.

# M.Y.O.B. a new way to balance accounts for small businesses

## M.Y.O.B.

**Teleware Inc.**
List price: $99

+ Innovative features well-tailored to small-business accounting; low price.

− Program uses permissive accounting practices that can get the inexperienced user in trouble.

**By Scott Beamer**

While accounting is normally among the most staid areas of Mac software, guerrilla marketing by Teleware Inc. is stirring things up. The company is selling its new small-business accounting package, M.Y.O.B., for $99 direct from Teleware by phone order only. (Demo disks are available for $5.) Teleware developed Managing Your Money for Meca Ventures Inc. and the Dow Jones Market Manager PLUS for Dow Jones & Co., but M.Y.O.B. is the company's first in-house effort.

M.Y.O.B. purchasers may be a bit dismayed when their orders arrive with no pretty packaging. Their confidence should return as they examine the hefty manual. It has an attractive cover, is well-laid-out and is clearly written. The program is compressed on a single disk. When it is unstuffed onto a hard disk, it uses more than 1 Mbyte of space.

**Using M.Y.O.B.** The user will soon discover the program is every bit as innovative as its marketing may suggest. There are several unusual features that make the program easy to set up, easy to learn and easy to use. Some of these probably soon will be seen in competitive products. M.Y.O.B. also includes innovations in the way books are kept. These may cause some chin-rubbing by accountants who must decide whether or not to go along with their clients' use of this package.

The first new wrinkle encountered is an accommodation in Set Up for the harried or inexperienced bookkeeper. Three paths are provided: one for those with an existing chart of accounts and set of books; a second for the beginner who wants to do things right; and a third, which provides little more utility than an electronic checkbook, for those wishing for a quick and dirty start.

M.Y.O.B. contains Accounts Receivable, Accounts Payable, General Ledger and Inventory modules, all fully integrated. A helpful feature for those just getting to know the program is the Executive Summary window, which is a sort of command center that helps you navigate around the rest of the package.

Another distinctive feature, worked deeply into the warp and weft of the program, is the card file. A card can be for a customer, vendor, employee or contact. The card contains customary information about each individual, including phone numbers that can be dialed with the click of a button, assuming a modem or dialer is

*See M.Y.O.B., Page 66*

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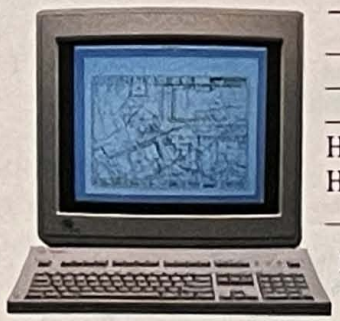

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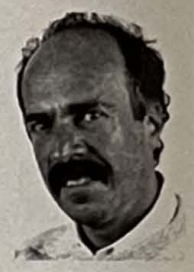
## The Human Interface

# Keeping System-folder chaos in check



BY DENNIS KLATZKIN

Anyone who's a fan of old-time radio shows knows about Fibber McGee's closet. It was a repository of the sundry and the inane, an avalanche just waiting to happen every time he opened the door. I know the feeling — I opened someone's System folder the other day and a bowling ball fell out.

Where does all the stuff in that folder come from? Does it propagate itself, like wire clothes hangers? This one System folder had Prefs files for programs I'd never heard of. There were scads of orphaned laser-printer fonts with ridiculous names that sound like colicky baby talk — ClearBla, BenguBoo, ConcoRom and FrutiBol. There were Word Temp files dating back to 1904. (Evidently, "Temp" doesn't stand for temporary. Temper, perhaps?)

The folder had countless Help files, dictionaries and digitized sounds. There were Start-up documents (INITs) and Control Panel devices (cdevs) for such critical tasks as making Oscar the Grouch pop out of the Trash, plus every program Apple ever issued, including Mousing Around and Amazing from 1984. Amid this mélange there were even a few moderately useful files, like the System and Finder.

The System folder represents the central nervous system of your Mac. Organizing it and monitoring the contents means more than just being tidy; it's a key element in establishing and controlling your computing strategies. A quick check of your System folder can tell you whether important files are present, what their version numbers are and when they were last modified. Peculiar goings-on in the System folder — like new, unidentifiable files or changes to old ones — can alert you to compatibility problems or even virus infections.

But some software designers have turned this folder into a dumping ground for every imaginable bit of software miscellany. Fortunately, many companies are reversing the trend with products that can maintain their auxiliary documents (such as dictionaries and Help files) in the same folder as the application.

Some publishers, such as Claris and Deneba, offer series of programs that can share dictionary files, so you don't have quite so many of them floating around. And Broderbund's new TypeStyler will search for its font files through subfolders nested in its own folder or the System folder, an innovative organizational tool.

There are also quite a few utilities to keep System-folder chaos in check. Foremost are ALSoft's Master Juggler and Fifth Generation's Suitcase II, two work-alikes that, among other impressive features, let you store laser-font files in any folder on any mounted volume. I'm always wary of unequivocal statements, but here's one you can trust: If you don't already own either of these two utilities, put down MacWEEK, go to the nearest software store or your telephone, and buy one.

Another of my favorite utilities for managing a neat System folder is Temperament 2.0, a dandy freeware cdev from Australia's John Rotenstein. It automatically deletes those annoying Word Temp files that incessantly breed in your System folder if you use Microsoft Word.

The most useful System-folder strategy of all will cost you no money and very little time, assuming you have a color Mac (otherwise it'll cost you a few grand, so you might want to think about it twice). You can use the Finder's eight selectable icon colors in coordination with its View by Color feature. Here's how.

Select all the Apple System files and set them to orange, the color that appears at the top of the list in View by Color mode. Make all your INITs and cdevs another color, and do the same for all your Prefs and Help files, as well as any other whole classes of files. Leave the black icon color unused.

You'll find you can scan the various categories of files in your System folder quite effectively this way. Most importantly, newly added files will be in the default black color at the bottom of the list, standing out so you can examine them. I routinely check my System folder for black icons, and it works beautifully. □

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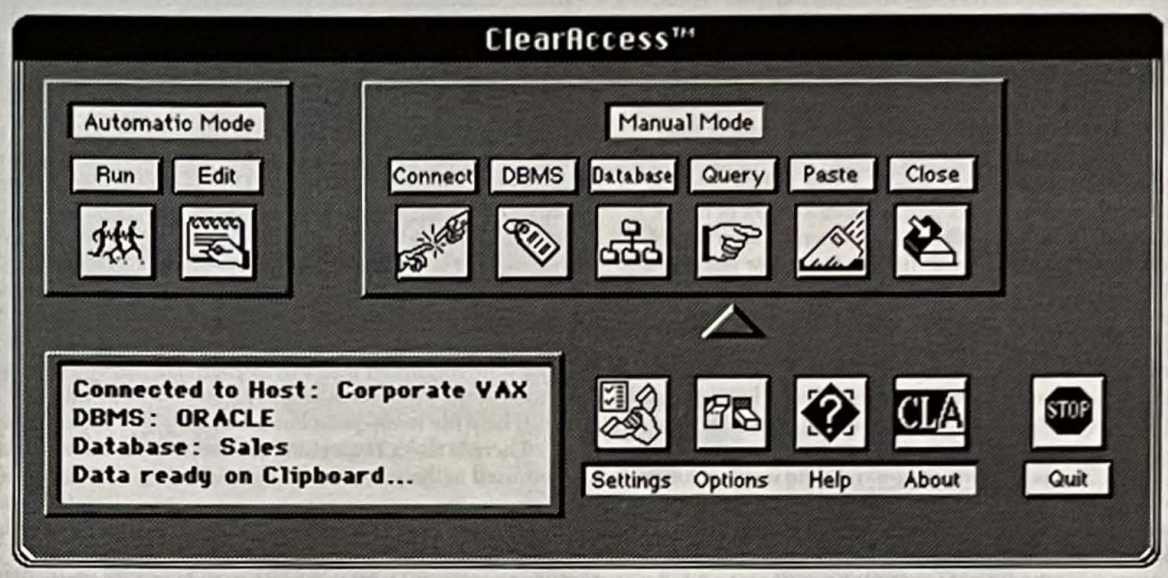


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## M.Y.O.B.

*From Page 62*

attached to the computer. Another button shifts you to the history card for an individual. An option allows every transaction involving a certain contact to be automatically entered on the individual's card. The user also can enter notes such as the date, time and content of phone calls. This card file and other elements of the package are linked to a calendar and a to-do list. Surprisingly, there are no cards for inventory items.

The Inventory module is somewhat rudimentary and is the weakest part of the program. In the inventory list, items can be searched by item number only, not by description. This can make it hard to find an uncommon item in a large inventory.

Account numbers are limited to five digits, the first digit indicating account type. Many users will find this structure too rigid, and it may even cause some to reject the program. Those using it, however, will find that this inflexibility is used cleverly to give quick summary reports for the balance sheet or the income and expense statement. The user can click buttons to set up the depth of information and choose to see the results as either numeric output or a pie chart.

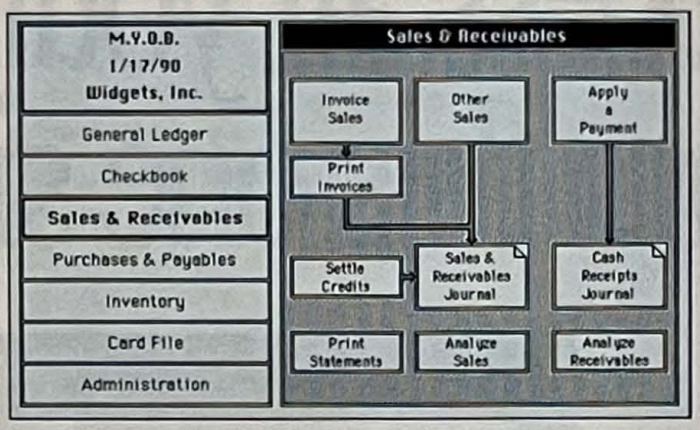
**Flexibility vs. structure.** Teleware has clearly tried to make this accounting package accessible to those with minimal bookkeeping or accounting backgrounds. However, there is a trade-off to this flexibility and ease of use. Those accustomed to working within the constraints of generally accepted accounting practices may feel uncomfortable with this newly found freedom.

M.Y.O.B. has taken the daring step of not requiring any period to be closed, and closing a period does not purge any records. Teleware recommends that data not be purged until disk space is a problem. This freedom should be a big hit with very small businesses where the bookkeeper may be undertrained and transactions are not that numerous.

The risk in giving the user this freedom is that, if it's clumsily deployed, users could destroy the validity of their books and perhaps make them unintelligible. The most prudent path for those not planning to do traditional periodic closings and associated data purges would be to keep doing their books in the old manner for the first several months they use M.Y.O.B. While this may require keeping a redundant set of books, it should prevent inadvertent destruction of records while developing a new pattern of record keeping with the program.

The backup advice given in the M.Y.O.B. manual also places the user in jeopardy. It recommends using alternating backup disks and a monthly archival disk. This is probably the least stringent backup system we have seen recommended with any small-business accounting program. While it should offer relief to those burdened by the much more stringent recommendations or requirements of most packages, it removes even more of the fail-safe controls normally associated with computerized accounting.

**Technical support.** With most accounting programs, one must rummage through the assorted packets of paper and cards included in the packaging to find any mention of tech support. But the M.Y.O.B. manual dedicates Page 2 to customer support, giving both voice and fax numbers. While technical support is not free after the first 30 days (from the first phone call), at $79 per year it is the lowest-priced service we are aware of for any Mac accounting program. This fee entitles the registered user to a free annual revision of the program as well. The on-screen help file is adequate but not elaborate. There is also a HyperCard glossary of terms used in the program and manual.




**The buttons on the left side of M.Y.O.B.'s command center shift the user to separate flow charts for each of the seven work areas of the program and show the logical flow among the elements.**

**Conclusions.** M.Y.O.B. is an astutely designed package, clearly aimed to fill the gap between personal financial-management packages (all of which claim to be suitable for small businesses) and more traditional small-business accounting packages. While Teleware candidly admits that its super-low price and guerrilla marketing tactics for M.Y.O.B. will last only until the company breaks into normal retail distribution channels, the price increase is unlikely to be large enough to put the package in direct competition with the next level of Mac accounting software, which typically starts at $395. M.Y.O.B. is clearly not ready to go head to head with these packages.

For many small businesses, careful consideration of the trade-offs will be necessary before deciding whether to go with M.Y.O.B. or with a more traditional package, such as Layered Inc.'s atOnce! or Computer Associates International Inc.'s Simply Accounting, which have heavier time requirements for both learning and use. However, others will find this package a godsend, just what they were looking for in features and flexibility.

Teleware Inc. is located at 22 Hill Road, Parsippany, N.J. 07054; (800) 322-6962. □

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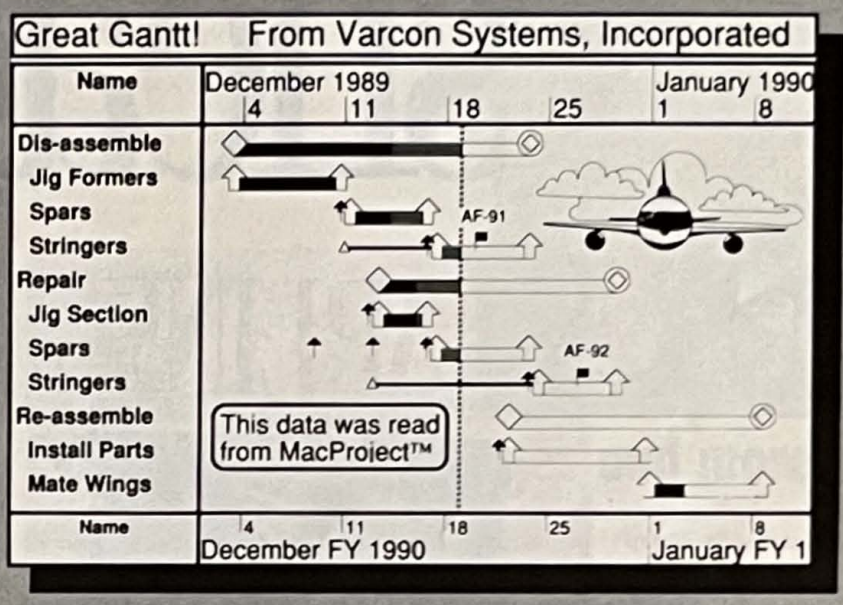


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—Réal Provencher
President

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| Mac IIcx 19" Trinitron 8-bit Color, 5 Mb RAM, 105 Mb Hard Drive, Mac 101 Keyboard | 9095 |
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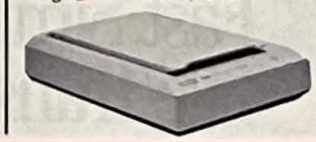

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# If you don't like it—we'll buy it back!

# Sure beats sneakers.

One of the oldest file transfer methods known to Mac is about to become obsolete. You can now forget about using your "sneaker network" to run disks and files between computers around the office.

Introducing LapLink Mac III, the fastest, easiest way to transfer files between Macs or between a Mac and a PC.

LapLink Mac III is very versatile and lets you move files at speeds of nearly 3 megabytes per minute.

That's fast. And it's also easy, thanks to a simple interface familiar to anyone who uses a Mac. Just select the files you want to transfer and click on the copy button.

The new LapLink Mac III comes in two versions. The ***Connectivity Pac*** gives you everything you need to transfer files between two Macs or a Mac and a PC. You get a universal cable that connects a Mac to a PC or to another Mac. An accelerator that boosts Mac-to-Mac file transfer speeds to up to 750,000 baud. File translators that make it simple to convert word processing documents from Mac formats to PC formats—or vice versa. And the ability to transfer files between two users over your existing AppleTalk cables or remotely over a modem. All for just **$189.95***.

The LapLink Mac III ***Network Pac*** lets you transfer files between five Macs on an AppleTalk network—without a dedicated file server or expensive hardware. Adding more users is as simple as buying more Network Pacs. And the Network Pac's suggested retail price of **$299.95*** works out to just **$60 per user**. Not bad for a package that includes three-level password protection and remote modem access.

For more information, including a LapLink Mac III brochure, call us at **(800) 662-2652**, extension **202**.

After all, why run your files around when you can use your computer?

## Fast. Simple. File Transfer Solutions.

LAPLINK Mac

Traveling Software

18702 North Creek Parkway, Bothell, WA 98011 • (206)483-8088

***Manufacturer's suggested retail price**

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# Discover the artist within!

Easy Color Paint 1.1, an exciting and versatile 256-color painting program for the Macintosh, gives you everything you need to express yourself – over 17 tools, user-defined patterns, user-defined color palettes, color printing, adjustable fonts and brushes, blends and other coloring modes. Includes sample color pictures and, to get you started, a "hi-tech coloring book". Runs on any Mac from the Plus to the IIci. Compatible with 32-bit quickdraw. Requires system 6.0.2 or later. Visit us at MacWorld '90, Booth #5327. To order now, send $79 or call 1-800-367-6899. Visa/MC accepted, 30-day money-back guarantee. Free brochures, starter kit for dealers.

**Creative Software 55 Clinton Avenue, New Providence, NJ 07974, (201) 665-9361**

# Backup your Mac for just $795.

There's no faster, safer method to backup a Mac than cartridge tape. And now, the Braemar SX40 makes it affordable.

Braemar is a leading manufacturer of taped-based systems for the OEM marketplace. In fact, we make many of the drives sold by our competition. So obviously we can back our claim. And build it for less.

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- Uses Mac interface.

To order the system that backs you up, call today 1-800-328-2719. (redemption certificates invalid with $795 price.)

**Braemar Corporation**
**11400 Rupp Dr.**
**Burnsville, Minn. 55337**
**(800) 328-2719**
**(612) 890-5135**
**Fax: (612) 890-0791**

# Economical solution to network faxing

Fax directly from your Microsoft Mail 2.0 Local Area Network (LAN) using FAXGATE. Everyone on the LAN can easily send faxes to any group 3 fax machine, PC fax board or Macintosh fax modem.
Requirements:

- BackFAX compatible fax modem
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- Microsoft Mail 2.0
- Macintosh Plus or later with 2-Mbytes of memory
- System software 6.03 or later

FAXGATE includes a complimentary five pack of MailMaker. Retail price is $395.

**Solutions Inc.**
**30 Commerce St.**
**P.O. Box 783**
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**Fax: (802) 865-9224**

# QuickCapture of images and more

QuickCapture is a real-time frame grabber board and software package from Data Translation for image capture, display on a Mac II monitor, processing, and exportation to other Mac software applications. Two versions are available, each with 640 by 480 spatial resolution – a 256-gray level model (DT2255, $1,245) and a 64-gray level model (DT2253, $495).

The 256-gray level version is also shipped with ColorKit software for capturing, processing, and outputting 24-bit color images.

Contact the Data Translation sales department for more information.

**Data Translation, Inc.,**
**100 Locke Dr., Marlboro, Mass. 01752-1192, (508) 481-3700Fax: (508) 481-8620**

# Color for the Plus, SE and Portable!

The Portable can now display color on virtually any color monitor. ScuzzyGraph color card provides the benefit of a larger more readable display, and ScuzzyGraph is the only product for the Plus, SE and Portable which provides color! Because ScuzzyGraph uses a powerful graphics processor it doesn't slow your Mac down. ScuzzyGraph gives you more desktop to work on, allowing the Mac's built-in screen for additional desktop. Simply plugs into your Mac's SCSI port. Available with or without a monitor starting at $995.

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# Enhance your MacDraw II graphics

Introductory price with DrawTools from Paracomp only $79!
The developers of MacUser Eddy Award winner, Swivel 3D, introduce three desk accessories created for MacDraw II —
Sizer: Resize objects absolutely or as a percentage, and compute areas.
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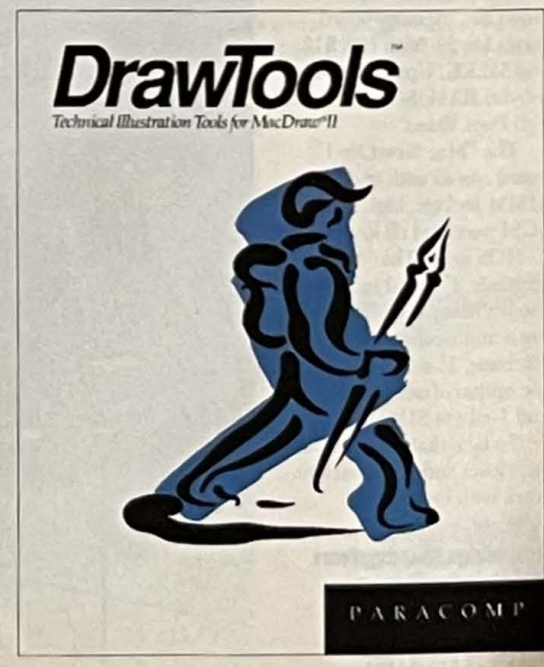
Tools: Construct fillets, extend or clip lines and arcs, and snap lines.
Make the Best Even Better DrawTools for MacDraw II




**Paracomp, Inc.**
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**San Francisco, Calif. 94107**
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• Makes a LaserJet IIP Macintosh-compatible • High-speed printer – resident interface • Chooser-compatible • True laser quality ImageWriter replacement • Supports Adobe Type Manager • Supports all LaserJet font cartridges • Two-year warranty • List price $345. Brings quick, quiet, affordable LaserJet quality to your Macintosh desktop. Call today! (208) 322-7163

**Extended Systems**
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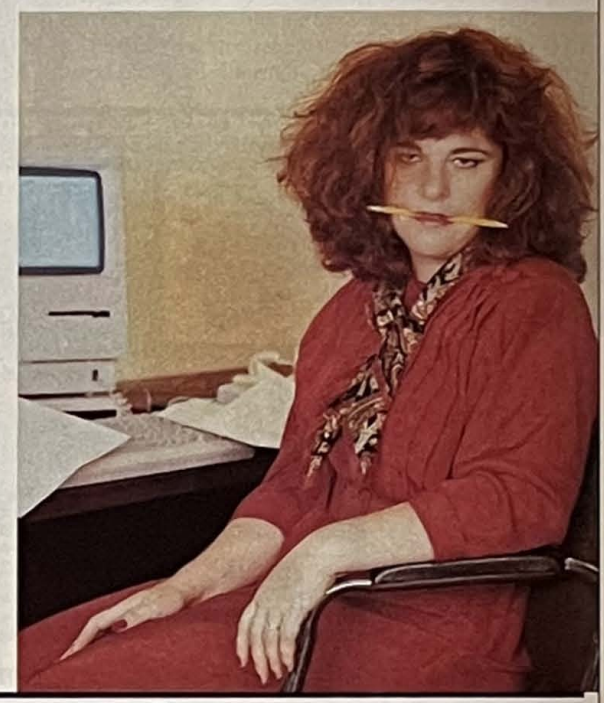
Is your personnel department Frazzzzled by the record keeping blues? Abra 2000 *magically* cuts paperwork and takes the drudgery out of HR record keeping. Abra is a complete employee record keeping system for companies from 10 to 10,000. Abra tracks: Personal information, job history, benefits (including COBRA), dependents, skills and user-defined events. Included are more than 50 "built-in" reports for EEO, salary analysis and insurance census. Options include: PC version, Multiuser, Attendance Module and Applicant Tracking. Test *"The Magic"* yourself. Send $25 (plus Calif. tax) for a demo and manual to see why we have more than 2000 happy customers.



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**485 Pala Ave.**
**Sunnyvale, Calif. 94086**
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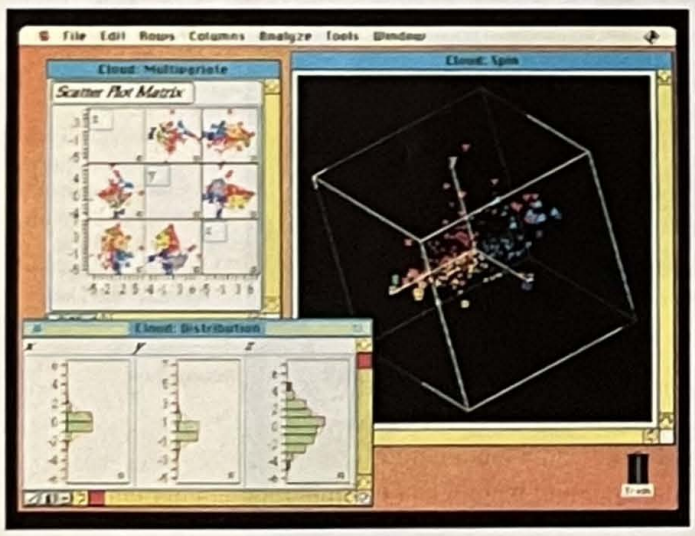
# JMP to the right conclusions

JMP statistical visualization software from SAS Institute is a quantum leap in data discovery. Powerful statistics and graphics are combined in one highly interactive package. Just point and click. Tools for manipulating, analyzing, and storing data all fit together so that one simple command generates a whole series of results!




Classical statistics are organized in six logical areas: Distribution of Y's, Fit Y by X, Fit Y by X's, Specify model, Spin and Y's by Y's. Each area comes complete with appropriate graphics: leverage plots, means comparison circles, spinning plots, and more.

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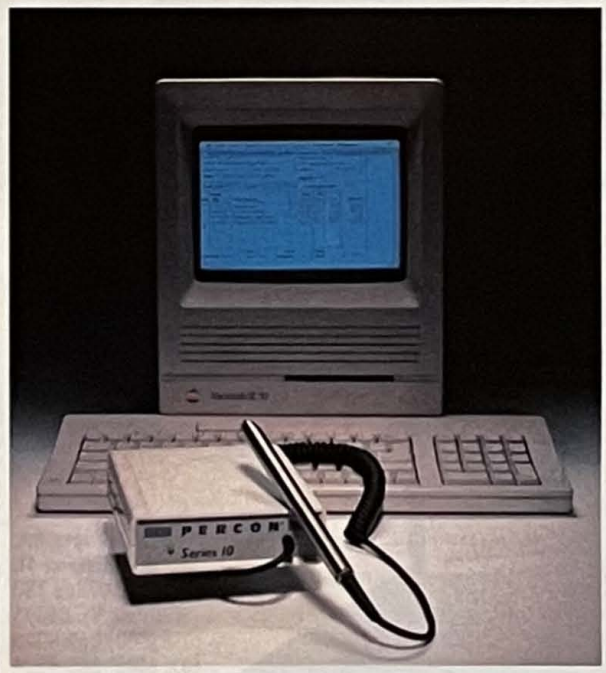
**SAS Institute Inc., JMP Sales Department, SAS Circle Box 8000, Cary, NC 27512-8000**
**(919) 677-8000, Fax: (919) 677-8123, In Canada: (416) 443-9811**

# PERCON's series 10 for your Mac

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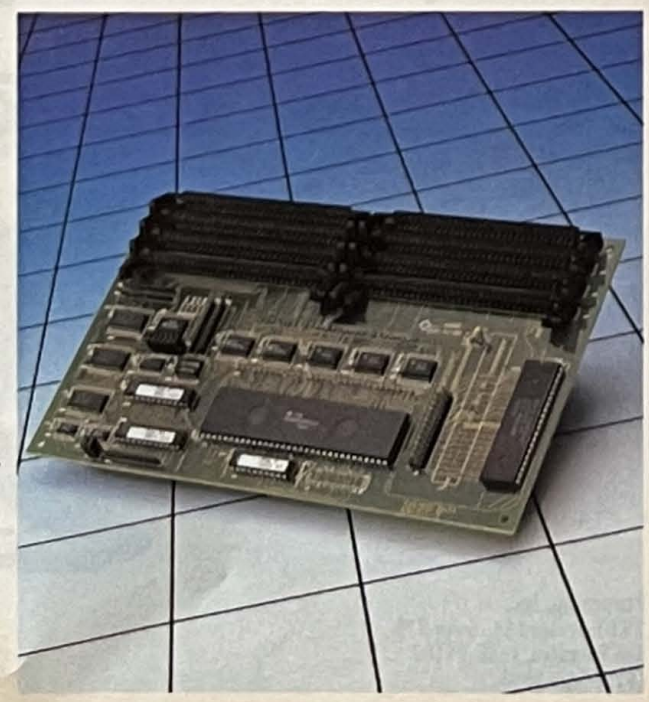
# New life for old Macs

Announcing the "Mac NewLife" memory board series for the Mac 128, 512, and 512KE. Upgrade to 4-mbytes RAM, SCSI port, and Full Page Video.

The "Mac NewLife 1" board comes with eight SIMM sockets, high speed SCSI port, and all low power C-MOS logic. The "Mac NewLife 2" board includes all the features of the first including a multiscanning video interface. The customer has the option of using both 256K and 1-mbyte SIMMs.

So take that old Mac out of the closet and put it back to work with today's software.



**Newbridge Microsystems**
**20 Edgewater St.**
**Kanata, Ontario Canada**
**(613) 836-1073**
**US: (800) 267-7231**

# CoStar LabelWriter now networkable!

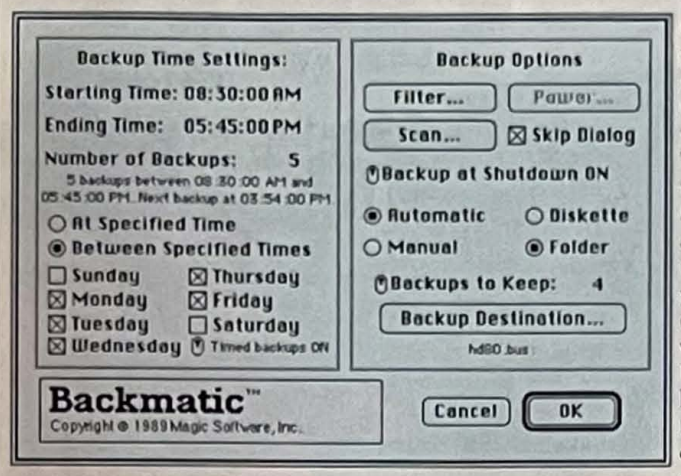
Now you can share the LabelWriter by using Shiva's NetSerial Version 3.3. Just place the three by six inch LabelWriter by your LaserWriter and pick up your address labels and letters at the same time.

The LabelWriter produces letter quality one by three and a half inch labels. A bundled desk accessory lets you create, format, and print labels at any time. Use the labels for addresses, Rolodex cards, notebooks, disks, file folders, machine scannable bar codes, and more.

Suggested retail – $249.95.

**CoStar Corp.**
**22 Bridge St., Greenwich, Conn. 06830**
**(800) 4-COSTAR, (203) 661-9700, Fax: (203) 661-1540, AppleLink: COSTAR1**

# Back up automatically – at shut down!




Imagine a backup program that backed up everything you did everyday. A program that you never had to remember to use. It just worked automatically. That program is Backmatic version 1.1 from Magic Software. Backmatic will automatically back up your new or changed files to your floppy drive, hard disk, or network server when you shut down. Backmatic can also make backups at preselected times, like 5:30 every day, every hour on the hour, or only on Thursdays at four o'clock in the morning. Backmatic is perfect for the individual Macintosh user, essential for the networked group, and ideal for Macintoshes that never shut down (like file servers.) Backmatic... because without it... backing up is hard to do!

Backmatic is available through you favorite dealer or direct for just $99.95 for a single user. 5 and 10 user packs and site licenses are available.

**Magic Software, Inc. 2206 Franklin St., Bellevue, Neb., 68005, (800) 342-6243, (402) 291-0670**

# 940,000,000 Bytes!

940,000,000 bytes of permanent, fast and removable data storage on the Corel PRO 940 optical disk drive.

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Corel PRO-940 only $3,845. (Including interface software and cabling! Shipping and duty extra.)

"Outstanding value on the Macintosh." – *BYTE Magazine, October 1989*

**Corel Systems Corp.**
**Advanced Technology Div.**
**1600 Carling Ave.**
**Ottawa, Ontario**
**Canada K1Z 8R7**
**(613) 728-8200**
**Fax: (613) 728-9790**

# Video Mail joins voice mail

Magnum's TFLX system which already handles any incoming or outgoing phone task from voice mail, order entry and telemarketing to appointment maker and info center, now adds video capabilities!

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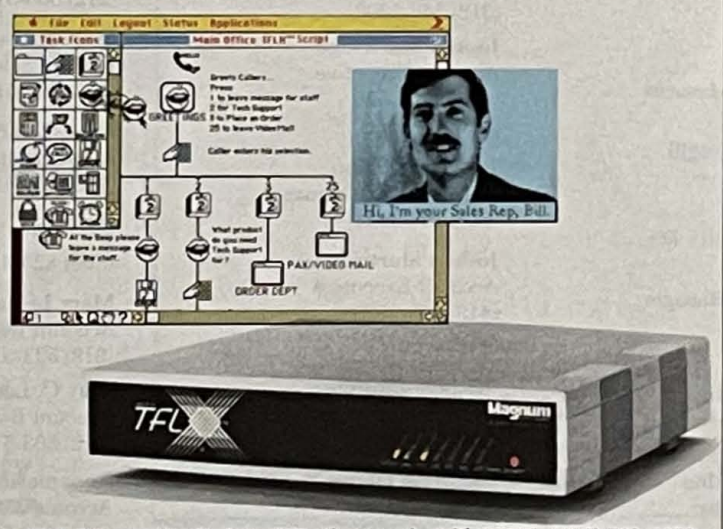
All applications are easily created with Magnum's extraordinary Picture Programming. $2,995. Call for an on line demo, or information.




**Magnum Software Corp., 21115 Devonshire St. Suite 337, Chatsworth, Calif. 91311, (818) 701-5051**

# Into multimedia?

The Panasonic Write Once Videodisc Recorder is the ideal high performance visual medium for professional Multimedia – storage, presentation and development.

Equip yourself with multi-format full-motion recording and playback in RGB, NTSC and S-Video, simultaneously and interchangeably including two high quality audio channels and instant access (..7 second) to any of the 54,000 frames on the disc.

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Each LocTalk kit contains: A locking connector box, two meter locking cable, and locking cable extender.

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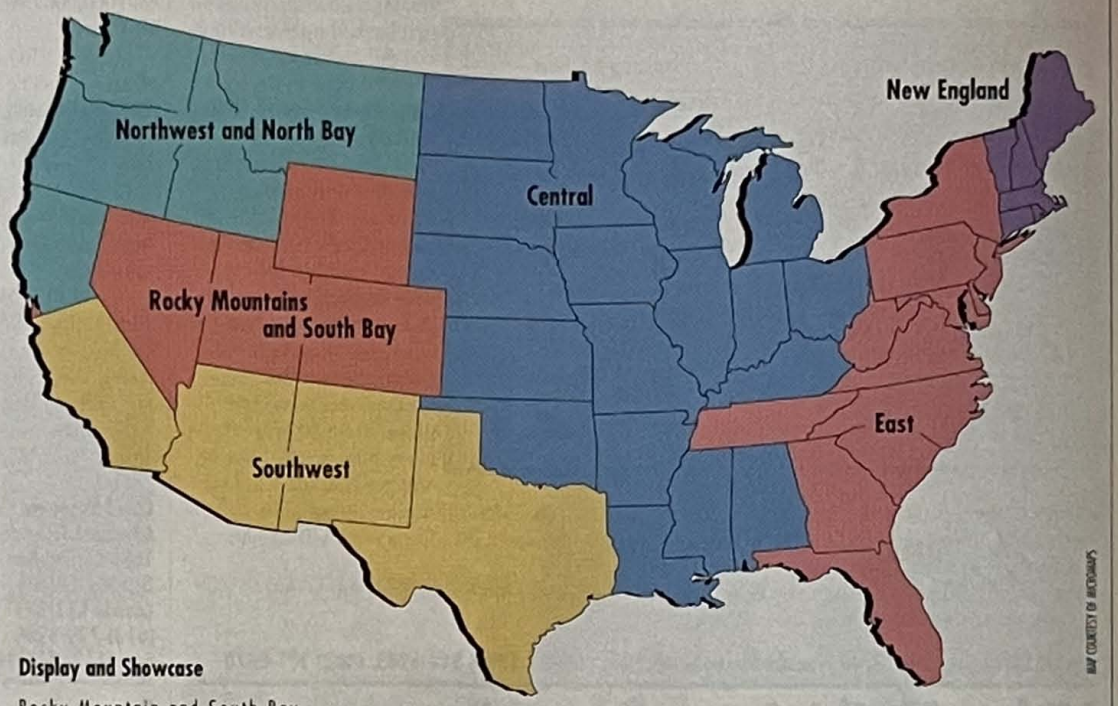


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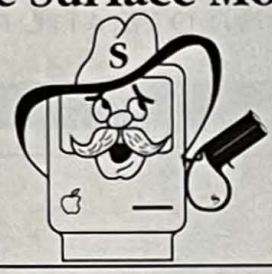

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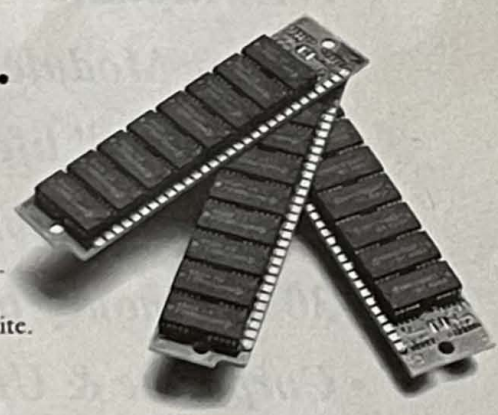

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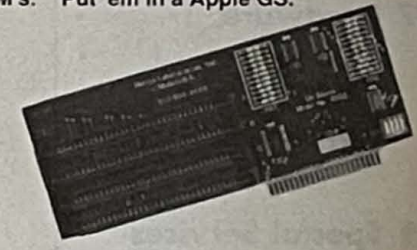

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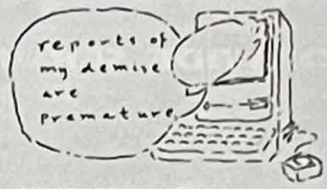


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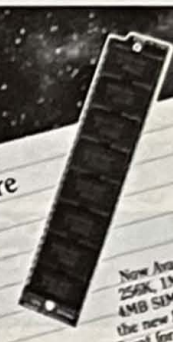

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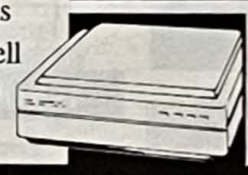

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# Dealers mixed on longer warranty

## *More customers may now buy Apple*

**By Raines Cohen**

San Francisco — Not everyone has expressed unmixed jubilation over Apple's long-awaited extended warranty. Macintosh dealers and repair-service facilities, for example, said they favor the new warranty but question its effect on their repair business and product mix.

"A lot of dealers like Businessland and Whole Earth Access had developed their own alternatives to AppleCare, taking advantage of their ability to get Apple replacement parts at cost," said Steve Sawyer, managing partner of CJS Systems, an independent repair and hardware specialty company in Berkeley, Calif.

"Cutting the price of AppleCare in half probably will undercut them temporarily," Sawyer said. "The effect on independents will probably be even stronger. It will limit my ability to sell extended-service contracts."

Some dealers said that the new one-year warranty on Apple products is also taking customers away from third-party hardware.

Steven Goldfarb, target-marketing sales executive at Computer Selection Business Center Inc. in San Francisco, said one of his customers immediately changed his order from third-party to Apple drives for his new Mac SE/30s. "When the customer found out about the new warranty, he went with Apple," Goldfarb said. "People would rather stay with Apple if the obstacles are removed."

Still, a number of peripheral vendors said they are not worried. "There's a price and flexibility advantage to using our products over Apple's, both for the customer and the dealer, and we offer a five-year warranty backed by Quantum," said Joel Kamerman, president of La Cie Ltd. of Tigard, Ore.

"We're not that worried about this announcement," said John Tylko, chief operating officer at GCC Technologies Inc. of Waltham, Mass. "Our warranty on all our drives is now two years."

*See Warranty, next page*

# RAM prices easing upward after manufacturers cut production

**By Henry Norr**

San Jose, Calif. — After a year and half of dramatic decline, memory prices have bottomed out and even turned upward.

While there is no prospect of a return to the peak prices of 1988, the cost of a 1-Mbyte memory module for the Mac from discount suppliers could climb to $85 or even $90 in coming weeks, analysts said.

"It's just a supply-demand correction," said Dean McCarron, vice president of technology at In-Stat Inc., a Scottsdale, Ariz., market-research company that tracks the semiconductor industry. "Because the parts were in oversupply, some of the Japanese manufacturers cut back on production. But they are already ramping back up, so prices should be stabilizing in a month or two."

Some manufacturers have shifted production lines to the newer 4-Mbit chips, but McCarron said that trend was not responsible for the recent upturn in prices.

The shortage could mean trouble for SIMM (single in-line memory module) vendors who depend on spot market purchases rather than long-term supply contracts. On the spot market, which reflects changing market conditions quickly and sharply, 1-Mbit dynamic RAM chips that recently sold on contract for $6.50 each were going for $8.25, according to James Wiebe, president of Newer Technology, a Wichita, Kan., memory vendor.

Some brokers are guaranteeing prices for only one day at a time, Wiebe added. Because Newer relies primarily on contract purchases, he said, it has so far been able to hold its suggested retail prices at $70 per SIMM, the all-time-low level adopted just weeks ago.

But Mike Frost, president of Technology Works, an Austin, Texas, memory vendor, said that

*See Memory, next page*

# Fairfield reaps success amid Iowa cornfields

## *Big developers turn to ClearAccess DA*

INDUSTRY PROFILE

**By John Battelle**

Fairfield, Iowa — Fly to Des Moines, Iowa's capital, rent a car and drive southeast. If you flick on your car radio, you can catch the latest feed-grain bids while driving past corn fields and gently sloping woods. Two hours later you'll arrive in Fairfield, a small farming town of about 10,000.

Fairfield boasts two motels, a few tractor dealerships and a picture-perfect town square complete with bandstand. It's not your traditional backdrop for a fast-growing software company specializing in Macintosh connectivity, nor is it a likely hub for what employees of Fairfield Software have dubbed "The Silicorn Valley."

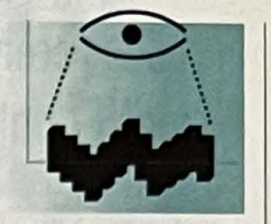
But Fairfield is no ordinary town, and Fairfield Software is no ordinary software company.

Founded in 1984, the company first took on a contract to do educational programming on the Apple IIe for Scott Foresman, the educational publisher. But in the past four years, Fairfield has become one of the leading database connectivity companies in the Mac market. It has garnered glowing praise and strong business partnerships with its first commercial software product, ClearAccess, from such giants as Microsoft Corp.,

*See Fairfield, next page*

HARRY BALBERT

**Fairfield President Gerald Caussade, foreground, with some members of the team that created ClearAccess, Fairfield's flagship connectivity product.**



# Business BRIEFS

### Adobe's acquisition of Emerald City a done deal

Mountain View, Calif. — Emerald City Software's yellow brick road may be paved with gold now that Adobe Systems Inc. has completed its acquisition of the company.

Menlo Park, Calif.-based Emerald City will become part of Adobe's Applications Products Division. Emerald City President Randy Adams and the company's 15 employees will assume positions at Adobe's headquarters here.

Existing Emerald City products eventually will be repackaged as Adobe products, although Emerald City's SmartArt IV, due out in the next few weeks, will be released under the Emerald City label.

**U.S. software sales in Europe & Australia**

| | Growth rate '88 – '89 | 4th Qtr. '89 growth rate | Total sales of sample in millions |
|---|---|---|---|
| Iberia (Spain & Portugal) | 122% | 186% | $13.7 |
| Italy | 113% | 243% | $25.8 |
| Scandinavia | 81% | 85% | $82.1 |
| Australia & New Zealand | 67% | 41% | $57.8 |
| France | 40% | 33% | $101.8 |
| Germany & Austria | 49% | 80% | $153.3 |
| U.K. & Ireland | 28% | 26% | $166.4 |
| Benelux | 22% | 26% | $61.3 |
| **Total** | **46%** | **54%** | **$662.2** |

*Source: Software Publishers Association*

### Sales of U.S. software in Europe, Australia soar

Washington — European and Australian sales by U.S.-based software companies continued to accelerate during 1989, according to a study released last week by the Software Publishers Association.

The report was based on data submitted by 20 U.S. publishers, including Lotus Development Corp., Microsoft Corp., Ashton-Tate Corp., WordPerfect Corp., Claris Corp. and T/Maker Co. The companies reported aggregate software sales of $662 million in Europe and Australia (measured at wholesale in U.S. dollars) for 1989, up 46 percent over 1988. Total sales in the United States and Canada grew only 12 percent last year.

For the fourth quarter, the participating companies reported 54 percent growth over the previous year in European and Australian sales. In Germany, the second-largest European market for U.S. publishers after the United Kingdom and Ireland, the figure topped 80 percent.

"The European market is on fire," said Ann Stephens, research director for the 600-member trade organization. "It is remarkable that software sales in some of the larger, more mature European markets are still experiencing growth rates of this magnitude."

### Takeover battle ends in Archive-Cipher Data merger

Costa Mesa, Calif. — Bringing an end to a three-month-long takeover fight, Archive Corp. and Cipher Data Products Inc. last week agreed on a merger plan.

Under the terms of the deal, completion of which is subject to the availability of financing, an Archive subsidiary, CAC Corp., will pay $114 million, or $8.25 per share, for Cipher. A CAC tender offer of $7.50 per share in December touched off a bitter legal and public-relations battle between the companies.

The settlement will bring several leading tape-backup brands under a single corporate roof. Last year Archive bought out Maynard Electronics, while Cipher took over Irwin Magnetic Systems Inc. All four organizations offer Macintosh backup products.

# Farallon receives PhoneNET patent

By John Battelle

Emeryville, Calif. — After four years of waiting, Farallon Computing Inc. last week received a patent on its PhoneNET twisted-pair networking technology.

The company applied for the patent, which covers Farallon PhoneNET Connectors, in August 1986, according to the company. Since Farallon introduced PhoneNET, which runs LocalTalk over ordinary twisted-pair telephone wires, several third-party companies, including Nuvotech Inc. of Sausalito, Calif., have come out with similar offerings.

Farallon officials insisted the company would not use the patent as a means of pressuring its competition.

"We're going to make it easy for them to comply with the patent," said Tom Rielly, Farallon's director of marketing. Licensing agreements are now being negotiated with several vendors, he said. A clear definition of compliance, however, has not been worked out.

The patent probably will not affect the Ethernet-over-twisted-pair market, where Farallon has considerably more competition.

Nuvotech President Terrence Filbert said that while he needed more time to review the patents completely, he did not think they would have an adverse effect on his company's business. □

## Fairfield

*From previous page*

Oracle Corp. and Apple.

From 1984 to 1988 Fairfield did custom programming for large clients. The company also contracted its talent (most of its software engineers have master's or doctorate degrees in computer engineering) out to software publishers. Fairfield's work can be seen in programs such as Timeworks Inc.'s Publish-It! and Portfolio Systems Inc.'s DynoDex.

The company's expertise spans many application areas and platforms besides the Mac, including minis and mainframes, Unix workstations, and IBM PCs and compatibles.

But Fairfield wanted to produce something all its own, according to Gerald Caussade, company president. So when Caussade's independent consulting service, United Networks, took over Fairfield in 1988, the resulting blend of programming talent and networking know-how spawned ClearAccess, Fairfield's first commercial product. The program shipped in August 1989.

"I wanted to create software that would make computing easier and information more accessible," Caussade said.

ClearAccess, which works as a desk accessory, offers an iconic interface through which users can access and retrieve information stored on networked databases. Initially limited to those databases supported by Apple's CL/1 connectivity language, ClearAccess now also provides direct support for databases built with Oracle from the Belmont, Calif.-based company of the same name. It will support direct connections to software from many other database vendors in the future, Caussade said.

According to Scott Hickey, vice president of product development, ClearAccess came at a time when large companies were grappling with a burgeoning number of data-hungry microcomputers. The problem was that data resided on larger and more established mainframe and minicomputer systems. ClearAccess was Fairfield's solution.

Corporations, application developers and Apple all seem to think ClearAccess is a great idea. When Apple shows CL/1 to corporate clients, it uses ClearAccess as its front end.

"I was participating at an Apple support-tools rollout in Houston, and people were running out of my demo so they could buy the product," Hickey said. "For a long time MIS people felt LANs were going to take over. But now they have discovered that larger systems can provide repositories of data for microcomputers."

To that end, Fairfield has created macros that integrate ClearAccess into HyperCard and several Mac applications. "We want to become the standard interface to data retrieval on the Mac," Caussade said.

But such success begs the question: How do you keep 28 software engineers and support staff happily employed in a place like Fairfield?

Hickey has a ready answer. "I come back here from business and I can breathe easy. People are friendly and crime is non-existent."

Fairfield is also the U.S. center for transcendental meditation, or TM, a spiritual and philosophical movement popularized by actors, musicians and business leaders in the 1970s and '80s. It is the site of the Maharishi International University, where 1,500 students ponder everything from physics to philosophy.

The fact that MIU chose to locate in Fairfield reflects the city's charm and tranquility. Most of Fairfield Software's employees prefer Iowa's fields and woods to the BMW-studded asphalt rivers of Silicon Valley, according to Caussade.

"Software is an art, and if people are fried due to the stress of big-city life, it is hard to keep a creative corporate culture," he said. Caussade should know. It was his experience as a systems programmer with IBM's Information Systems and Technology Group in Boca Raton, Fla., that drove him to find a small company that shared his vision of a more relaxed and creative approach to software development.

"The people at Fairfield all want to be here," Caussade said, noting that he has almost no employee turnover. "That is hard to find in the Silicon Valley."

Fairfield is still doing contract programming for large companies and for software publishers, but it is discussion of ClearAccess that makes Caussade the most animated.

"There are many, many things in the works for ClearAccess," he said. With the talent and the loyalty of the people at Fairfield, the future may hold quite a few more stories datelined in the Silicorn Valley. □

## Warranty

*From previous page*

Apple, in fact, acknowledges that its longer warranty will push third parties to try even harder to please — and therefore attract — more users. "I think it's great for the customer, but it means that the third-party vendors are going to have to do something even cleverer to get people to buy their products," said Bob McNinch, product marketing manager for customer service at Apple. "The customer wins all around." □

*John Battelle contributed to this report.*

## Memory

*From previous page*

even though his company also buys mainly on contract from manufacturers, it has already been forced to push prices up. Just two or three weeks ago, he said, the company's price for high-volume deals was in the low $60s; last week it was in the low $70s. "It might go up 30 percent," he said, "but it won't break $100 — there's just too much capacity out there."

Some analysts said the price increases may have resulted indirectly from fears of Japanese and Korean manufacturers that they could face renewed charges of dumping into the U.S. market. Public statements last month by executives of Micron Technology Inc. of Boise, Idaho, one of the few remaining U.S. manufacturers of dynamic RAM, raised the possibility that Micron might seek federal action against the Asian suppliers. □

# MarketWEEK

## STOCKWATCH

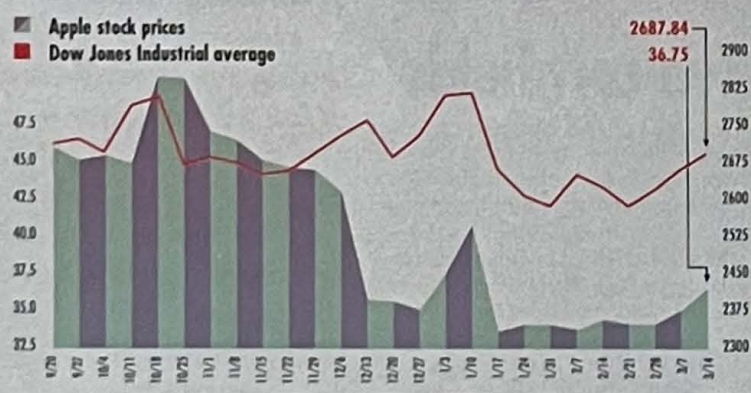
### Apple breaks out of slump, posts $1.38 gain

Fueled by new product reports and the company's announced intention to repurchase 5 million of its shares of common stock, Apple stock sprang to life last week after a protracted lull.

The price climbed $1.38 a share, or 3.89 percent, closing at $36.75.

The reason for the buyback: Apple is sitting on more than $900 million in cash and feels the stock is a good value at its current level. In fact, since July 1986 Apple has bought back a total of 20 million of its shares.

But the big winner last week was Adobe Systems Inc., which advanced 14.29 percent to close at a 12-month high of $42. Two weeks ago, IBM Corp., which itself rose 0.71 percent, said it will use Adobe's font technology across its IBM Systems Application Architecture. At that time, Adobe surged 21.49 percent following the announcement.




**Mac-related stocks**

| | CLOSING 3/7/90 | CLOSING 3/14/90 | PERCENT CHANGE | P/E RATIO | ANNUAL HIGH | ANNUAL LOW |
|---|---|---|---|---|---|---|
| **MAC-RELATED COMPANIES** | | | | | | |
| Adobe Systems Inc. | 36.75 | 42.00 | 14.29 | 27 | 42.00 | 14.00 |
| Aldus Corp. | 21.25 | 19.88 | -6.47 | 16 | 22.25 | 12.25 |
| **Apple** | **35.38** | **36.75** | **3.89** | **11** | **50.38** | **31.88** |
| Ashton-Tate Corp. | 13.38 | 12.75 | -4.67 | 12 | 24.00 | 8.75 |
| Businessland Inc. | 10.75 | 10.63 | -1.16 | 18 | 14.13 | 6.50 |
| Microsoft Corp. | 102.75 | 107.25 | 4.38 | 29 | 108.75 | 45.75 |
| Motorola Corp. | 62.25 | 65.25 | 4.82 | 17 | 65.25 | 39.50 |
| Seagate Technology Inc. | 18.63 | 18.13 | -2.68 | 10 | 19.75 | 10.25 |
| 3Com Corp. | 13.50 | 13.50 | 0.00 | 16 | 28.75 | 10.00 |
| **INDUSTRY INDICATORS** | | | | | | |
| Digital Equipment Corp. | 74.50 | 77.38 | 3.86 | 11 | 109.50 | 69.50 |
| IBM Corp. | 105.50 | 106.25 | 0.71 | 16 | 119.63 | 93.38 |
| Sun Microsystems Inc. | 23.25 | 23.50 | 1.08 | 53 | 24.75 | 13.00 |

*Compiled by Nordby International Inc., Boulder, Colo.*

## MARKETWATCH

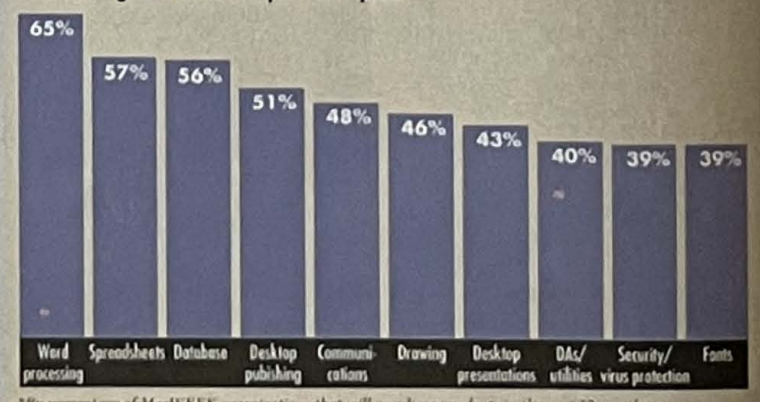
### Word processing software on top of 1990 buying list

In a 1989 MacWEEK study of subscribers, 65 percent said their organizations plan to buy word processing software this year.

Of those, 72 percent said they are considering Microsoft Corp.'s programs, 16 percent are looking at Claris Corp.'s MacWrite II, and 19 percent hadn't decided on a vendor.

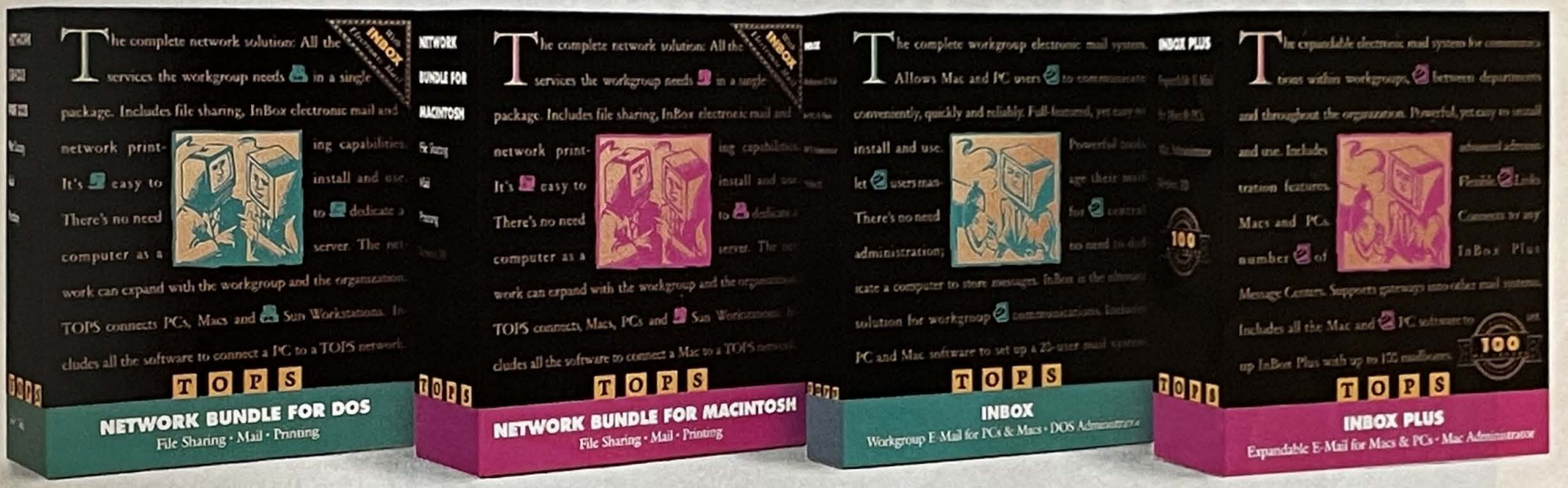
Also in the survey, 57 percent said they expect to purchase spreadsheets this year; of those, 74 percent are considering Microsoft as their spreadsheet vendor. On the database side, 56 percent said they are looking at databases, of which 27 percent specified ACIUS Inc.; 26 percent said they did not have a particular brand in mind. — *By Nathalie Welch*

**Mac managers' software purchase plans***




**By percentage of MacWEEK organizations that will purchase products in the next 12 months.*
*Source: 1989 Purchase Plans Study/The Research Spectrum*

# Four reasons why 1990 will be the year of the workgroup.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# Claris spreads its wings

With Apple's product announcements finally out of the way, there's time to investigate maneuverings at some other companies in the industry. Last week, for example, Claris began implementing some changes resulting from a careful re-evaluation of the company's existing product line. To begin with, Claris has decided to drop one existing product and end development on an unannounced one, moves that probably will result in some related staff reductions.

SmartForms is first to go. Despite several rave reviews, SmartForms sales have not been as brisk as Claris had expected, probably amounting to only a few hundred units per month. Whether SmartForms will be sold to smaller companies that can more profitably market it or be allowed to die a quiet, dignified death has not been decided.

The rigid product-review procedure has also resulted in the canning of the unannounced personal project-management product. The Knife reports that internal Claris projections showed that this product, codenamed Road Runner, would probably yield sales of a similar volume and therefore would not generate sufficient revenue. Why all this concern about beefing up the product line? Is it excess-cash-on-hand envy caused by Apple's cash surplus? Or is it an upcoming IPO that's driving the activity?

What hasn't changed in the Claris marketing plans are major updates this year to the remaining products in the lineup. Most probably, one common feature to all the upgrades will be complete System 7 compatibility. Claris is known to be chomping at the bit to be the first out of the starting gate with a complete line of 32-bit-clean System 7-compatible products.

Finally, the Knife reports that there is mounting evidence that Claris is secretly developing versions of several of its products for Windows 3.0. With Wall Street analysts predicting practically flat Mac sales for the foreseeable future, having a line of products for another graphical-interface platform would probably be a wise move for a developer with plans for worldwide, multiple-platform domination.

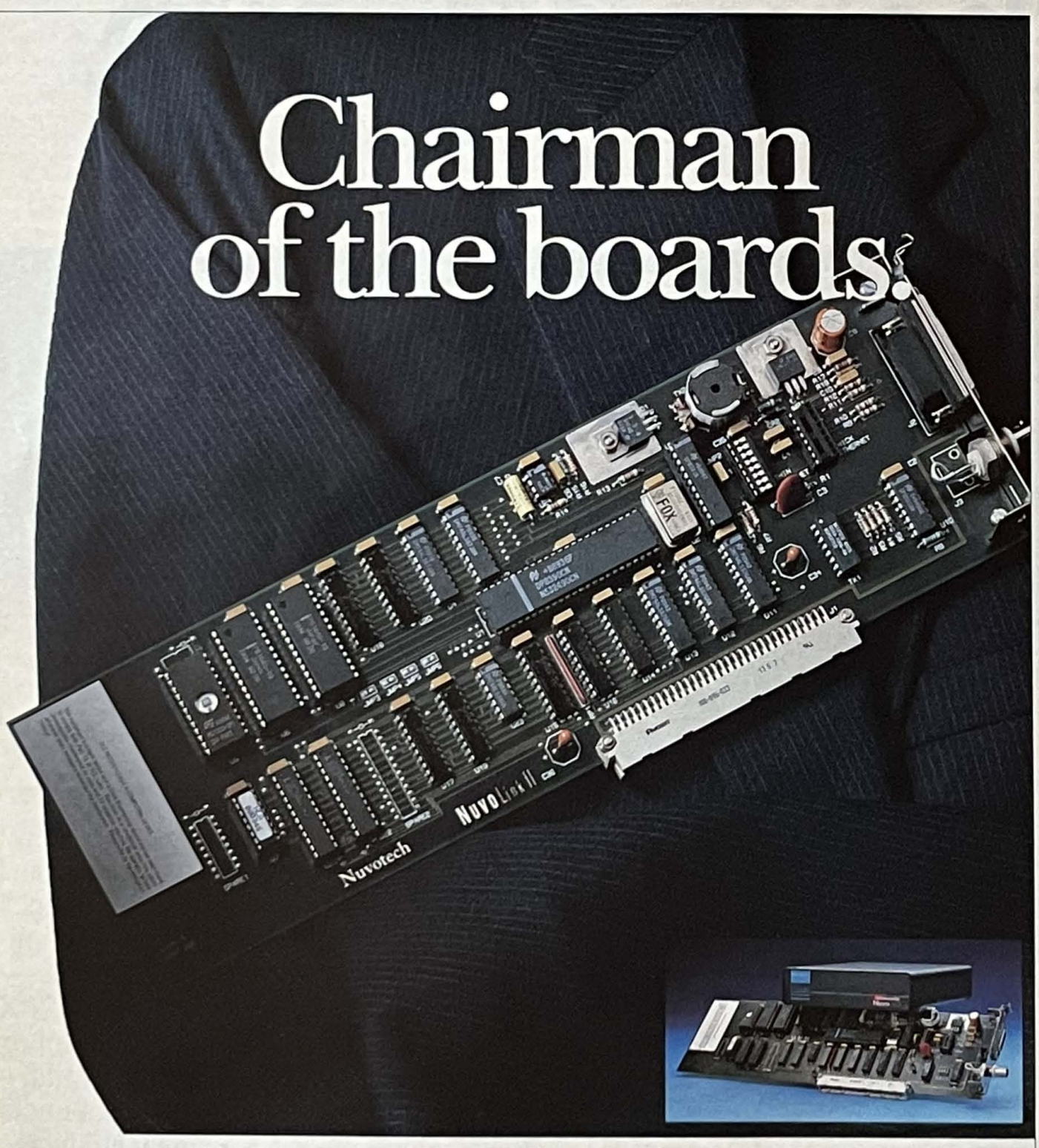
**Future spreadsheets.** Contrary to previous information, it appears that Claris is also working on a multiplatform spreadsheet, which the Knife can only conclude would mean the Mac and Windows. Also on the spreadsheet front, sources familiar with goings-on at Ashton-Tate say that a spreadsheet for NeXT is under development and may be announced as early as this summer. While the name of the product is currently undetermined, the Knife says it's no rehash of Full Impact.

**FreeHand moves.** Believe it or not, not all product news this week centered on Claris. The Knife has learned that a new version of FreeHand is in the works and is scheduled to be unveiled at Macworld Expo next month in San Francisco. Sources speculate that Adobe will continue to be tight-lipped about the new update to Illustrator 88, a work currently in alpha testing.

Developers throughout the country got a surprise in their mailboxes last week. The March issue of Apple Direct, Apple's publication for developers, contains all the details of this week's product announcements. In a follow-up letter to developers Apple blamed the mix-up on a "misunderstanding" with the company's mailing house and asked developers to consider the information as confidential. So much for Apple security.

**No entry.** Last week's item about a pirate bulletin board with instructions for illegal entry into Macworld Expo generated an unseemly large number of inquiries, mostly from people who thought Mac the Knife would volunteer the board's phone number. No way, says the Knife. Also, Bob LeVitus, author of "Dr. Macintosh," inadvertently got caught in the fray. Big Bob has absolutely no connection with the pirate board and was understandably annoyed at assumptions to the contrary. Sorry, Bob. □

*As punishment for her feudalistic poll tax, Maggie Thatcher is permanently barred from ever earning a MacWEEK mug. You, however, need only supply the Knife with a bit of usable information. Call the Knife at (415) 243-3500 or MCI (MactheKnife).*

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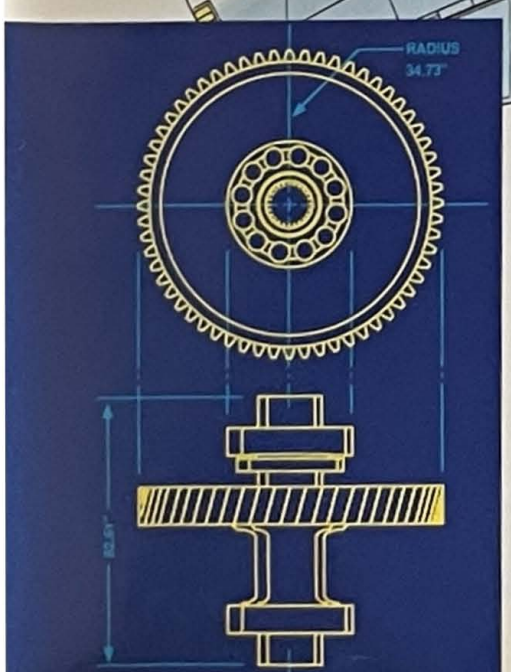


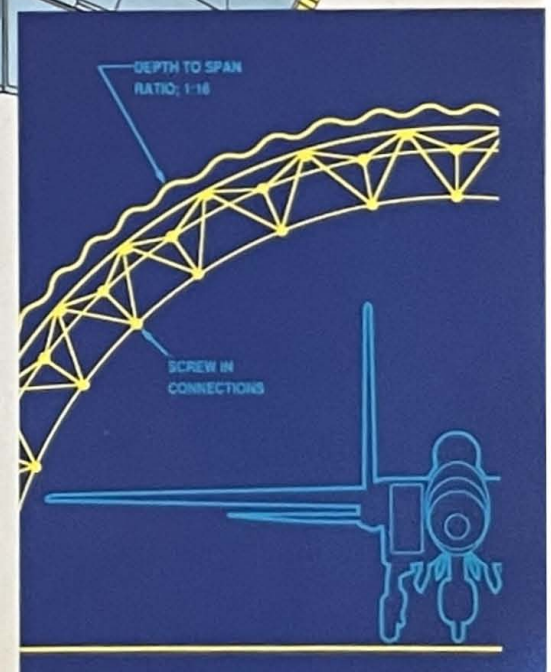


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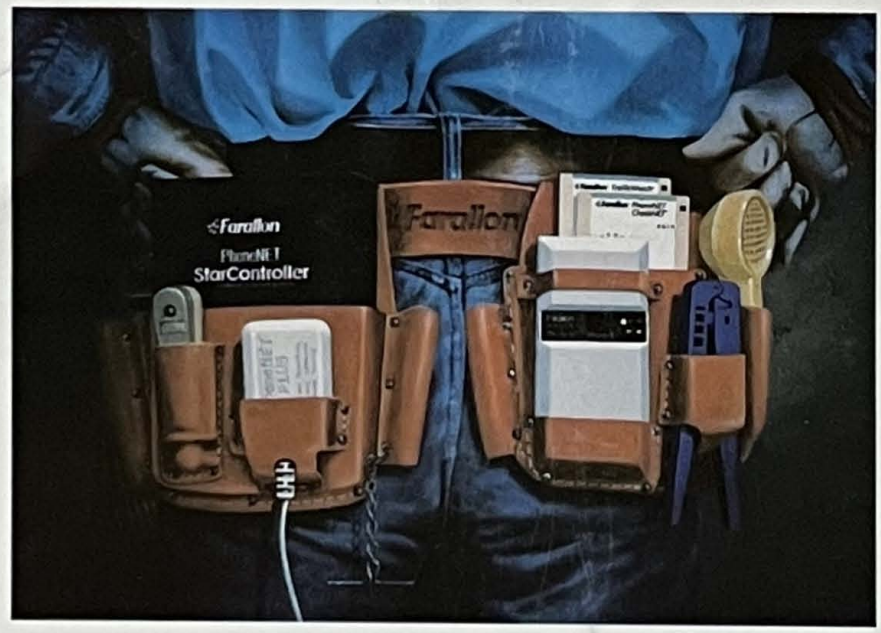


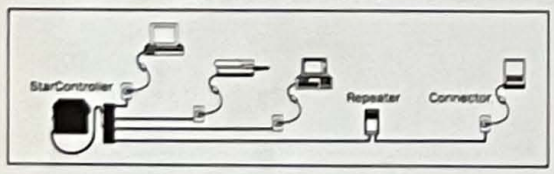


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Here are the nuts and bolts of the most reliable network hardware you can buy.

The PhoneNET Connector connects each device to the network, whether it's a small network or a branch of a larger one.

The PhoneNET StarController is a central "hub" that repeats network signals and sends them over multiple branches. It comes with StarCommand software to view network load and test wiring.

And for long distances, the PhoneNET Repeater is the reliable way to run network wiring over several miles.

Now for the software.

Farallon's network management tools include StarCommand, TrafficWatch, and CheckNET. Together, they help you monitor the health of the network, troubleshoot, analyze traffic, and generally help optimize the performance of your network.

**LocalTalk or Ethernet? You can have both.**

You no longer have to sacrifice economy for speed.

Sure, the PhoneNET System provides an affordable way to run LocalTalk. But sooner or later, you may want to add more speed to certain parts of the network.

No problem.

Farallon's new products support industry-standard 10 Mb Ethernet over telephone wire, so you can increase the speed of those sections of the network which require more performance.

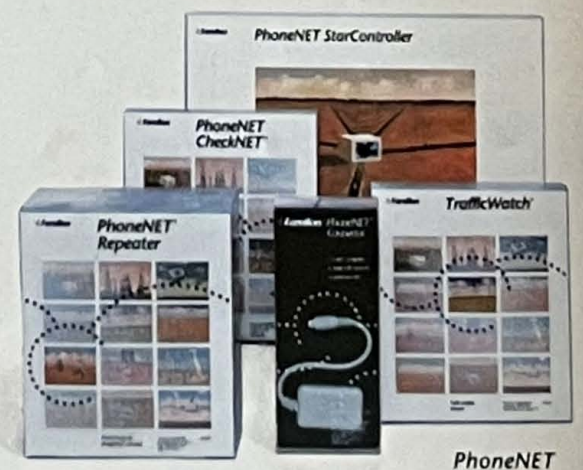
And if you're wondering how we'll fit into your long-range plans, you'll be glad to know the PhoneNET System was designed right from the start to work with ISDN.

All of which makes investing in the PhoneNET System now such a smart move for today and tomorrow.

**We do the nitty-gritty.**

The bottom line is, networks can be just an expensive pain in the neck if they're not wired right. So, if you're thinking about installing a new network or expanding the one you have, give us a call. Because nobody knows the network nitty-gritty like we do.

For technical support, call (415) 596-9000.




*Look for the PhoneNET System logo when you buy network hardware and software products. It is your best assurance of quality and reliability.*

PhoneNET System

**Farallon™**

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